Jessica D. Starkey, Ph.D.

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Education

University of Connecticut	2008	Ph.D.	Cell and Developmental Biology
Kansas State University	2003	M.S.	Animal Sciences and Industry
Kansas State University	2001	B.S.	Animal Sciences and Industry – Business Option
Colby Community College	1998		Agribusiness

Professional Experience

October 2021 – Present
Associate Professor with tenure
Auburn University Department of Poultry Science, Auburn, AL
August 2014 – September 2021
Assistant Professor (tenure track)
Auburn University Department of Poultry Science, Auburn, AL
June 2012 – Present
Starkey Consulting Services, Gainesville, GA
October 2012 – Present
Adjunct Professor of Animal Science
University of Georgia Department of Animal and Dairy Science, Athens, GA
June 2012 – Present
Adjunct Professor of Meat and Muscle Biology
Texas Tech University Department of Animal and Food Sciences, Lubbock, TX
January 2009 – May 2012
Assistant Professor of Meat and Muscle Biology (Tenure Track)
Texas Tech University Department of Animal and Food Sciences, Lubbock, TX
August 2004 – December 2008
Graduate Research and Teaching Assistant
University of Connecticut Department of Molecular and Cell Biology, Storrs, CT
September 2003 – June 2004
Research Associate
The Pennsylvania State University Department of Poultry Science, State College, PA
May 2001 – May 2003
Graduate Research Assistant
Kansas State University Department of Animal Sciences and Industry, Manhattan, KS
August 2001 – March 2002
Kansas State University Growth and Development Laboratory Manager, Manhattan, KS
August 1999 – May 2001
Kansas State University Swine Nutrition Undergraduate Research Asst., Manhattan, KS
June 1999 – August 1999
Kansas State University Swine Teaching and Research Center Student Employee, Manhattan, KS

Memberships in Professional Organizations and Honor Societies

Poultry Science Association
American Society of Animal Science
American Meat Science Association
World's Poultry Science Association
Plains Nutrition Council
Gamma Sigma Delta

Honors and Awards

Auburn University College of Agriculture Dean's Award for Excellence in Instruction Winner, 2023
Auburn University College of Agriculture Club Advisor of the Year Award Winner, 2023
Auburn University Alumni Undergraduate Teaching Excellence Award Winner, 2022
Alabama Poultry & Egg Association Presidential Award for Excellence in Student Mentoring Winner, 2022
Auburn University College of Agriculture Club Advisor of the Year Award Winner, 2022
Auburn University College of Agriculture Dean's Grantsmanship Award Winner, 2020
Auburn University College of Agriculture Dean's Grantsmanship Award Winner, 2018
Auburn University College of Agriculture Dean's Young Researcher Award Nominee, 2018
Texas Tech University CASNR AASCARR Distinguished Young Educator Award Nominee, 2011

Faculty Teaching Experience and Scholarly Activity

Auburn University

Instructor of Record

Undergraduate courses

POUL 3030 Commercial Poultry Production, Fall 2014 to present
POUL 3150 Poultry Physiology, Spring 2014 to present
POUL 4980 Undergraduate Research in Muscle Biology
POUL 5030 Advanced Commercial Poultry Production, Spring 2022 to present
POUL 1000 Introductory Poultry Science, Fall 2021

Graduate courses

POUL 6030 Advanced Commercial Poultry Production
POUL 7970 Special Topics - Experimental Techniques in Growth Biology
POUL 7990 Research and Thesis
POUL 8990 Research and Dissertation

Graduate Student Committees

Chair/Co-chair:

Ph.D. (6 total)

1. **J. Wesley Rogers** (current)
   Dissertation title: Impact of incubation temperatures on the broiler chicken endocrine growth axis
2. **Kylie Bruce Sizemore** (current; co-advised with Dr. C. Hanlon)
   Dissertation title: Effectiveness of various egg sanitation practices in commercial hatcheries
3. **Jorge Luis Sandoval** (current)
   Dissertation title: Muscle stem cell function in the broiler chicken myopathy, Wooden Breast
4. **Gerardo Abascal-Ponciano** (current)
   Dissertation title: Effect of Eimeria maxima challenge on development of broiler chicken intestinal immunity
5. **Martha Rueda** (graduated December 2024; Co-advised with Dr. J. Davis)
   Dissertation title: Evaluation of broiler chicken feed wastage with different commercial feeder pan types, settings, and supplemental feed tray types
6. **Joshua Flees** (graduated December 2022)
   Dissertation title: Role of muscle stem cells in the Wooden Breast broiler myopathic meat quality defect

M.S. (21 total)

1. **Ileana Berganza** (current)
   Thesis title: Evaluation of the physicochemical and organoleptic characteristics of jerky-style pet treats made with chicken liver and cricket meal
2. **Randy Domer** (current)
   Thesis title: Comparison of growth performance, carcass characteristics, and incidence of meat quality defects in heritage and modern broiler chickens

3. **Juan Barberena** (current)
   Thesis Title: Impact of incubation conditions on skeletal muscle satellite cell activity in biceps femoris muscles of broiler chickens
4. **Hilary Carrera** (graduated December 2024)
   Thesis title: Sensory assessment of pet treats derived from up-cycled broiler processing co-products
5. **J. Wesley Rogers** (Accelerated MSc – graduated December 2024)
   Thesis title: Effect of early and late-stage incubation conditions on embryonic skeletal muscle satellite cell population heterogeneity in broiler chickens
6. **Diego Ventura** (graduated December 2023)
   Thesis title: Effect of branch chain amino acid ratios on broiler chicken jejunal and liver protein expression
7. **Cristopher Almendares** (graduated August 2023)
   Thesis title: Effect of branch chain amino acid ratios on broiler chicken skeletal muscle protein expression
8. **Said Herrera** (graduated August 2023)
   Thesis title: Effect of ractopamine supplementation on skeletal muscle fiber type in Mangalica pigs
9. **J. Enrique Banegas** (graduated August 2023)
   Thesis title: Effect of late-stage incubation thermal variation on hatchability, growth performance, carcass characteristics, and skeletal muscle satellite cell activity of broiler chickens
10. **Jorge Romero** (graduated August 2023)
    Thesis title: Effect of structure forming agent inclusion on color, physicochemical and textural characteristics of pet treats derived from up-cycled broiler chicken wing tips
11. **Josh Etherton** (graduated August 2023; Co-advised with Dr. J. Linhoss)
    Thesis title: Investigation into measured and modeled illuminance in commercial broiler houses providing natural light
12. **Jorge Luis Sandoval** (graduated December 2022)
    Thesis title: Effect of different dietary protein sources on skeletal muscle growth characteristics and stem cell activity of young piglets
13. **Caroline (Cece) Gregg** (graduated December 2022)
    Thesis title: Role of muscle satellite cells in the broiler chicken wooden breast myopathy
14. **Brittany Wall Hutson** (graduated December 2022)
    Thesis title: Assessment of early-stage thermal variation on embryonic mortality, hatchability, growth performance, and carcass characteristics of broiler chickens
    Thesis title: Assessment of lighting in modern broiler chicken production facilities
15. **Allan J. Calderon** (graduated December 2021)
    Thesis title: Effect of dietary protein source on piglet gastrointestinal stem cell activity and local immune response
16. **Samuel F. Leiva** (graduated December 2021)
    Thesis title: Effect of maternal and posthatch 25-hydroxycholecalciferol supplementation on broiler chicken gastrointestinal tract development and immunity
17. **Gerardo Abascal-Ponciano** (graduated December 2021)
    Thesis title: Effects of dietary protein source and litter conditions on gastrointestinal tight junction and cytokine protein expression
18. **Marc Presume** (graduated December 2021)
    Thesis title: Adding value to processing co-products using a structure forming agent to produce pet treats

19. **A. Jake Keel** (graduated August 2020 – Accelerated BS-MS)
    Thesis title: Effect of dietary protein source and litter condition on broiler gastrointestinal stem cell mitotic activity and macrophage densities
20. **Luis Pedro Avila** (graduated August 2020)
    Thesis title: Effect of maternal and posthatch 25-hydroxycholecalciferol supplementation on broiler chicken muscle development and growth
21. **Oscar J. Tejeda** (graduated December 2018)
    Thesis title: Effect of incubation temperature variation and genetic selection on broiler chicken growth performance, skeletal muscle growth characteristics, and meat yield

M. Ag.

1. **Orlando Fiallos** (graduated August 2024)
   Thesis title: Effect of early-stage incubation thermal variation on skeletal muscle satellite cell activity of broiler chickens

Member:

Ph.D.

1. **D. Alex Tigue** – Ph.D. Animal Sciences (Drs. Bratcher and Mullenix, co-major advisors)

M.S.

2. **Olamide Durodola** – M.S. Biosystems Engineering (Dr. J. Davis, major advisor)
3. **Taylor Papstein-Novak** – M. S. Animal Science (Dr. Moisa, major advisor)
4. **Ranjit Boyal** – M.S. Poultry Science (Dr. Bourassa, major advisor)

Undergraduate Research Fellow Advisor/Mentor (5 Total)

4 Animal Science majors
1 Poultry Science majors

Undergraduate Research Assistant Mentor/Supervisor (120 Total)

1 Ag Economics major
56 Animal Science majors
16 Biomedical Science majors
9 Food Science majors
36 Poultry Science majors
2 Wildlife Science majors

International Visiting Research Scholar/Intern Advisor/Mentor (68 Total; students from 16 countries)

46 Zamorano University, Tegucigalpa, Honduras
4 Universidade Tecnológica Federal do Paraná DV, Marechal Candido Rondon, Brazil
5 University of Guyana, Georgetown, Guyana
3 EARTH University, San Jose, Costa Rica
2 Yangzhou Agricultural University, Yangzhou, China
2 Universidade Federal do Rio Grande do Sul, Porto Alegre, Brazil
2 Universidade Estadual de Maringá, Maringá City, Brazil
1 São Paulo State University, São Paulo, Brazil
1 Federal University of Santa Maria, Santa Maria, Brazil
1 National Autonomous University of Mexico (UNAM), Queretaro, Mexico
1 Universidad de Guadalajara (CUCBA), Guadalajara, Mexico

Texas Tech University

Instructor of Record

Undergraduate Courses

ANSC 2202 Principles of Anatomy of Domestic Animals

ANSC 3316 Animal Growth and Development

Graduate Courses

ANSC 5401 Experimental Techniques in Meat Science and Muscle Biology
ANSC 5304 Growth and Development
ANSC 7000 Supervised Graduate Research

Guest Lecturer

ANSC 1401 General Animal Science – beef cattle breed lecture
ANSC 3403 Selection and Care of Meats – growth and development labs

Graduate Student Committees

Chair

M.S. (4 total)

1. **Kelly C. Hutton** (Graduated August 2012)
   Thesis title: Effect of 25-Hydroxycholecalciferol on Broiler Chicken Skeletal Muscle Growth and Development
2. **Mathew A. Vaughn** (Graduated May 2012)
   Thesis title: Effect of Rate of Gain During the Stocker Period on Beef Cattle Skeletal Muscle Development, Satellite Cell Activity, and Marbling Development
3. **James D. Coffey** (Graduated August 2011)
   Thesis title: Effect of 25-Hydroxycholecalciferol on Gilt Reproductive Performance and Prenatal Porcine Tissue Gene Expression
4. **Elizabeth A. Hines** (Graduated August 2011)
   Thesis title: Effect of Maternal 25-Hydroxycholecalciferol Supplementation on Prenatal Porcine Skeletal Muscle Development

Member: 6 Ph.D. students
Member: 2 M.S. students

Undergraduate Research Scholar Advisor

2 Animal and Food Science majors

Student Advisee/Mentee Awards and Honors (73 total since 2014)

1. Hilary Carrera. 2025. American Feed Industry Association Pet Food Conference Travel Award.
2. Jorge Sandoval. 2025. International Poultry Scientific Forum Graduate Student Oral Presentation Certificate of Excellence Award.
3. AU Poultry Science Club. 2025. US Poultry & Egg Association 2nd place Student Scrapbook of the Year Award.
4. Martha Rueda. 2024. Poultry Science Association Graduate Student Oral Presentation Certificate of Excellence Award.
5. Hilary Carrera. 2024. Petfood Forum Graduate Student Oral Presentation Competition Winner.
6. Jorge Sandoval. 2024. Alabama Feed and Grain Association Scholarship Winner.
7. Randy Domer. 2024. Caribbean Veterinary Medical Conference Travel Award.
8. Gerardo Abascal-Ponciano. 2024. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
9. Jorge Sandoval. 2024. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
10. Hilary Carrera. 2024. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
11. J. Wesley Rogers. 2024. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
12. AU Poultry Science Club. 2024. US Poultry & Egg Association 1st place Student Scrapbook of the Year Award.
13. AU Poultry Science Club. 2024. US Poultry & Egg Association 3rd place Student Club of the Year Award.
14. Caroline Gregg. 2023 Auburn University Graduate School Master's Thesis Award.
15. Joshua Flees. 2023. Auburn University Graduate School Distinguished Dissertation Award.
16. Brittany Wall-Hutson. 2023. International Poultry Scientific Forum Graduate Student Oral

Presentation Certificate of Excellence Award.

17. Wesley Rogers. 2023. Auburn University Student Research Symposium Undergraduate 2nd place STEM Oral Presentation Award.
18. Gerardo Abascal-Ponciano. 2023. Auburn University Student Research Symposium Graduate 2nd place STEM Oral Presentation Award.
19. Brittany Wall-Hutson. 2023. Auburn University Student Research Symposium Graduate 3rd place STEM Oral Presentation Award.
20. Caroline Gregg. 2023. Auburn University Student Research Symposium Graduate 1st place College of Agriculture Oral Presentation Award.
21. Hilary Carrera. 2023. American Society of Animal Science Companion Animal Section 3rd Place Graduate Student Presentation Award.
22. Jorge Sandoval. 2023. Auburn University College of Agriculture Graduate Student Research Poster Showcase Doctoral Student Category Winner.
23. Caroline Gregg. 2023. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
24. Gerardo Abascal-Ponciano. 2023. Targeting Excellence Graduate Student Scholarship.
25. Gerardo Abascal-Ponciano. 2023. Aviagen Graduate Student Fellowship.
26. Jorge Sandoval. 2023. Alabama Feed and Grain Graduate Student Scholarship.
27. Jorge Sandoval. 2023. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
28. Martha Rueda. 2023. Auburn University S. Allen Edgar Endowed Graduate Student Scholarship.
29. AU Poultry Science Club. 2023. US Poultry & Egg Association 1st place Student Scrapbook of the Year Award.
30. AU Poultry Science Club. 2023. US Poultry & Egg Association 3rd place Student Club of the Year Award.
31. J. Wesley Rogers. 2022. Auburn University Undergraduate Research Fellowship.
32. Gerardo Abascal-Ponciano. 2022. Targeting Excellence Scholarship
33. Orlando Fiallos. 2022. Targeting Excellence Scholarship
34. Jorge Sandoval. 2022. Poultry Science Association Student Travel Award
35. Caroline Gregg. 2022. Poultry Science Association Student Travel Award
36. Guilherme Tesser. 2022. Poultry Science Association Student Travel Award
37. Alexandra Caballero. 2022. Poultry Science Association Undergraduate Student Presentation Certificate of Excellence
38. Catherine Walls. 2022. Auburn University Student Research Symposium Overall STEM Undergraduate Competition Winner.
39. J. Wesley Rogers. 2022. Auburn University Student Research Symposium Agriculture Undergraduate Student Competition Winner.
40. J. Enrique Banegas. 2022. Auburn University Student Research Symposium Agriculture Graduate Student Competition Winner.
41. Joshua Flees. 2022. Auburn University College of Agriculture PhD Graduate Poster Competition Winner
42. Caroline Gregg 2022. Auburn University College of Agriculture MS Graduate Poster Competition Winner
43. Wesley Rogers. 2022. Auburn University College of Agriculture Undergraduate Poster Competition Winner
44. Caroline Gregg. 2022. S. Allen Edgar Endowed Graduate Student Scholarship Winner
45. Jorge Sandoval. 2022. S. Allen Edgar Endowed Graduate Student Scholarship Winner
46. Gerardo Abascal-Ponciano. 2022. Aviagen Annual Fellowship Winner
47. Joshua Flees. 2021. Elanco Graduate Seminar Scholar Annual Award
48. Jorge Romero. 2021. Smithfield Student Leadership Workshop Travel Award
49. Justin Dunavant. 2021. Smithfield Student Leadership Workshop Travel Award
50. Gerardo Abascal-Ponciano. 2021. Auburn University College of Agriculture Graduate Student Research Poster Showcase Award
51. Justin Dunavant. 2021. Auburn University College of Agriculture Graduate Student Research Poster

Showcase Award
52. Jorge Romero. 2021. Auburn University College of Agriculture Graduate Student Research Poster Showcase Award
53. Jorge Sandoval. 2021. Auburn University College of Agriculture Graduate Student Research Poster Showcase Award
54. Samuel Leiva. 2020. Auburn University College of Agriculture Research Symposium Graduate Student Competition. First place.
55. Marc Presume. 2020. Auburn University College of Agriculture Research Symposium Graduate Student Competition.
56. Samuel Levia. 2020. Auburn University Research Symposium STEM Graduate Student Poster Competition. First place.
57. Jorge Sandoval. 2020. Auburn University Research Symposium STEM Undergraduate Student Poster Competition. First place.
58. A. Jake Keel. 2020. Southern Poultry Science Society Graduate Student Oral Presentation Competition Award in Physiology.
59. Joshua Flees. 2020. Southern Poultry Science Society Graduate Student Oral Presentation Competition Award in Management.
60. Joshua Flees. 2020. Southern Poultry Science Society Graduate Travel Award presented to the top overall Graduate Student Presenter.
61. Joshua Flees. 2020. Targeting Excellence Scholarship Award.
62. Joshual Flees. 2019. Auburn University College of Agriculture Research Symposium Graduate Student Competition. Second place.
63. Lauren W. Shortnacy. 2019. Auburn University Undergraduate Research Fellowship.
64. Joshua Flees. 2019. Poultry Science Association Graduate Student Travel Award.
65. Joshua Flees. 2019. Poultry Federation Graduate Student Travel Award.
66. Luis Avila. 2019. Poultry Federation Graduate Student Travel Award.
67. Samuel Leiva. 2019.Poultry Science Association Graduate Student Presentation Award.
68. Gerardo Abascal-Ponciano. 2019. Poultry Science Association Undergraduate Student Presentation Award.
69. Danny Patino. 2019. Poultry Science Association Undergraduate Student Presentation Award.
70. A. Jacob Keel. 2018. Auburn University Undergraduate Research Fellowship.
71. Samuel Leiva and Jorge Sandoval. 2018. Zamorano University Undergraduate Thesis Competition – 2nd place Thesis Award.
72. Judson Powell. 2017. Auburn University Undergraduate Research Fellowship.
73. Jeanine Arana and Allan Calderon. 2017. Zamorano University Undergraduate Thesis Competition – 2nd place Thesis Award.

Teaching Grants and Gifts Awarded **Total = $209,883 ($189,501 directly to J. D. Starkey)**

Teaching Grants Awarded

*(Percentages in parentheses indicate amount awarded directl*y to J. D. Starkey.)

Underlined names indicate the undergraduate student advisee.

1. Auburn University Undergraduate Research Fellowship. Assessment of early-stage thermal manipulation on broiler chicken muscle satellite cell population densities at transfer and at hatch. 2022. J. W. Rogers and **J. D. Starkey**. $1,700. (70% PI)
2. Auburn University Daniel F. Breeden Endowed Grant. Enhancing student knowledge of poultry house electronics through development of Interactive Poultry House Environment Simulators (IPES). 2021. J. Linhoss, J. Campbell, J. Davis, W. Batchelor, Y. Bao, J. Starkey, and **C. Starkey**. $4,000 (15%, Co-PI)
3. Auburn University Undergraduate Research Fellowship. Effect of dietary protein source on broiler chicken gastrointestinal stem cell activity. 2018. A. J. Keel, **J. D. Starkey**, and C. W. Starkey. $4,900. (30%, Co-I)

4. Auburn University Undergraduate Research Fellowship. Effect of the Wooden Breast myopathy on broiler chicken collagen and myogenic regulatory factor protein expression. 2019. L. W. Shortnacy, C. W. Starkey, and **J. D. Starkey**. $1,900. (70%, PI)
5. Auburn University ePortfolio Project Grant Competition. Integration of Student ePortfolio Use into the Auburn University Poultry Science Curriculum. 2017. **J. D. Starkey**, C. W. Starkey, and A. Morey. $24,983 (54%, PI).
6. Auburn University Undergraduate Research Fellowship. Effect of particle size and proportion of fines in growth performance of broiler chickens. 2017. J. E. Powell, **J. D. Starkey**, and C. W. Starkey. $1,400 Award. (30%, Co-I)

Teaching Grants Submitted – Not Funded

1. A transdisciplinary approach to secure the safety of the food supply system while protecting the environment. 2021. K. Macklin., et al., **J. D. Starkey**. USDA-NIFA Sustainable Agricultural Systems. $10,000,000 (0.5%)
2. A transdisciplinary approach to secure the safety of the food supply system while protecting the environment. 2019. K. Macklin., et al., **J. D. Starkey**. USDA-NIFA Sustainable Agricultural Systems. $9,550,000 (0.5%, Co-PI)
3. Strengthening Secondary Agriscience Educators' Technical Expertise through Targeted Professional Development. 2017. C. Clemons, J. Lindner, **J. Starkey**, T. Knappenberger, and W. Pacheco. $150,000 (20%)
4. Poultry Science Undergraduate Research Training and Career Track Exposure at Auburn University. 2018-2023. C. W. Starkey and **J. D. Starkey**. USDA-NIFA. $499,967 (50%)

Teaching Program Gift Funds

1. Unrestricted gift funds from industry supporters. 2014 – present. $171,000

Teaching Publications

1. Starkey, J. D., C. W. Starkey, and A. Morey. 2018. Integration of student e-portfolio use into the Auburn University poultry science curriculum. Poult. Sci. 97 (E-suppl. 1). (60%)
2. Starkey, C. W. and **J. D. Starkey**. 2022. Developing an undergraduate research program in applied poultry science and animal food manufacturing. American Society of Animal Science Annual Meeting. J. Anim. Sci. 100 (E-suppl.). (25%)
3. **Starkey, J. D.** and C. W. Starkey. 2022. Developing an undergraduate research program in fundamental poultry science. American Society of Animal Science Annual Meeting. 100 (E-suppl.). (75%)

Invited Teaching Presentations

1. **Starkey, J. D.** North American Renderers Association Annual Convention. 2024. Recruitment and retention of employees. Santa Barbara, CA. October 24, 2024
2. **Starkey, J. D.** 10th Symposium of Zamoranos. 2024. Impact of Zamoranos on a Multidisciplinary Animal Growth Physiology Research Program. Auburn, AL. August 24, 2024.
3. **Starkey, J. D.** American Feed Industry Association Pet Food Conference at the International Production and Processing Expo. Developing the Next Generation of Pet Food Employees. 2017. Atlanta, GA. January 31, 2017.

Research/Creative Activity

Total Research Funding Awarded = $11,688,228 ($4,516,894)

***Grants and Contracts Awarded* = $11,287,228 ($4,115,894 directly to J. D. Starkey)**

(% in parentheses indicated the amount awarded directly to J. D. Starkey)

1. Role of incubation conditions in the broiler chicken Wooden Breast myopathy. 2023-2027. **J. D. Starkey**. USDA NIFA-AFRI Foundational Animal Nutrition, Growth and Lactation Program A1231. $650,000 (100%)
2. Effects of environmental conditions in live production efficiency and product quality in commercial poultry. 2020-2028. J. D. Davis, Y. Bao, B. I., Baker-Cook, J. Campbell, C. W. Starkey, C. L. Hanlon, and **J. D. Starkey**. USDA-ARS Cooperative Agreement. $7,746,270 (25%)
3. Assessing muscle satellite cell function in the broiler chicken Wooden Breast myopathy. 2020-2023. **J. D. Starkey** and C. W. Starkey. USDA NIFA-AFRI Foundational Animal Nutrition, Growth and Lactation Program A1231. $500,000 (80%)
4. Impact of early-stage incubation temperature variation on muscle development, satellite cell activity, and incidence of wooden breast and white striping in broilers. 2020. C. W. Starkey, and **J. D. Starkey**. US Poultry & Egg Assn. $79,770 (60%)
5. Effect of feed enzyme inclusion on broiler chicken growth performance and carcass parts yield. 2020. C. W. Starkey and **J. D. Starkey**. ADM Animal Nutrition. $134,873. (50%)
6. Effect of increased concentrations of choline chloride on broiler chicken live performance, carcass yields, and incidence of wooden breast under heat stress and high stocking density growing conditions. 2020. C. W. Starkey and **J. D. Starkey**. Balchem, Inc. $60,000 (50%).
7. Evaluating commercially available essential oil blends on broiler performance and carcass yields. 2019. C. W. Starkey and **J. D. Starkey**. DSM Nutritional Products. $60,859. (50%)
8. Evaluating commercially available carbohydrase enzymes on broiler performance and carcass yields. 2019. C. W. Starkey and **J. D. Starkey**. Adisseo, Inc. $63,485 (40%)
9. Impact of dietary protein source and litter condition on broiler gastrointestinal tract immunity and stem cell activity. 2019. C. W. Starkey and **J. D. Starkey**. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $50,000 (50%)
10. Effect of dietary protein source and litter condition on broiler chicken growth performance and muscle stem cell activity. 2018-2020. **J. D. Starkey**. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $50,000 (100%)
11. Assessment of physiological responses to controlled atmosphere and electrical broiler stunning methods. 2018-2019. D. V. Bourassa and **J. D. Starkey**. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $25,000 (50%)
12. Role of Muscle Stem Cells in the Wooden Breast Chicken Meat Quality Defect. 2018-2021. **J. D. Starkey** and C. W. Starkey. USDA-NIFA AFRI Foundational Grant Program (CRIS Number: 1014981). $447,675. (80%)
13. Effect of feed enzyme (ADM Empirical NSP Mixer) inclusion on broiler chicken growth performance and carcass parts yield. 2018-2019. C. W. Starkey and **J. D. Starkey**. ADM Animal Nutrition. $85,129. (50%)
14. Investigating Rovabio® Advance and Phytase Interactions in Broiler Diets with Reduced Nutrient Density on Broiler Chicken Growth Performance, Carcass Parts Yield, and Bone Mineralization. 2018. C. W. Starkey and **J. D. Starkey**. Adisseo, Inc. $86,867. (50%)
15. Effect of combining maternal and post-hatch 25-hydroxycholecalciferol (Hy·D®) supplementation on broiler chicken skeletal muscle developmental characteristics, satellite cell mitotic activity, growth performance, and carcass yield. 2018-2020. **J. D. Starkey**, J. L. Wilson, and C. W. Starkey. DSM Nutritional Products, Inc. $272,268. (71%)
16. Defining the effect of diet form (antibiotic-free, all-vegetable vs. animal byproducts), Alterion® (without vs. with) and litter condition (built-up vs. new) on broiler performance and meat yield. 2017. C. W. Starkey and **J. D. Starkey**. Adisseo, Inc. $99,832. (50%)

17. Effect of increased concentrations of choline chloride on broiler chicken live performance, carcass yields, and incidence of wooden breast. 2016-2018. C. W. Starkey and **J. D. Starkey**. Balchem, Inc. $70,000 (50%).
18. Effect of increased choline chloride on catfish yield and muscle fiber characteristics. 2016. Balchem, Inc. **J. Starkey**. $9,500 (100%)
19. Application of Novel Techniques to Detect and Track the Progression of an Emerging Broiler Chicken Myopathy. 2015. A. Morey, R. Moon, R. Beyers, W. Dozier, W. Pacheco, **J. Starkey**. Auburn University Intramural Competitive Grants Program. $50,000 (30%).
20. Impact of in ovo thermal manipulation on broiler chicken muscle development, growth, and satellite cell activity. 2015. **J. Starkey**. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $50,000 (100%)
21. Effects of dietary amino acid density on growth performance, satellite cell activity, collagen gene expression, and the incidence of wooden breast. 2015. W.A. Dozier, **J. D. Starkey**, T. Brandebourg. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $50,000 (72%)
22. Effect of 25-hydroxycholecalciferol on broiler chicken myogenesis *in vivo*. 2012. **J. Starkey.** DSM Nutritional Products. $15,000 (100%)
23. Physiological mechanisms regulating the coordinated development of marbling and muscle in stocker cattle. 2011. C. Krehbiel, U. DeSilva, G. Horn, **J. Starkey**, P. Lancaster. NCBA-National Cattlemen's Assoc. Foundation. $75,000 (43%)
24. Physiological mechanisms regulating the coordinated development of marbling and muscle in stocker cattle. 2010. C. Krehbiel, U. DeSilva, G. Horn, **J. Starkey**, P. Lancaster. NCBA-National Cattlemen's Assoc. Foundation. $65,000 (38%)
25. Effect of 25-hydroxycholecalciferol on broiler chicken myogenesis *in vitro*. 2010. **J. Starkey**. DSM Nutritional Products. $6,000 (100%)
26. Mechanistic action and further enhancement of feeding vitamin D3 to zilpaterol-fed cattle. 2010. M. Miller, C. Brooks, B. Johnson, R. Rathmann, **J. Starkey**. Intervet, Inc. $98,000 (19%)
27. Enhancing tenderness through feeding vitamin D3 to cattle fed zilpaterol. 2010. M. Miller, C. Brooks, B. Johnson, R. Rathmann, **J. Starkey**. Intervet, Inc. $98,000 (19%)
28. Effect of 25-hydroxycholecalciferol on prenatal porcine skeletal myogenesis. 2009. **J. Starkey**. DSM Nutritional Products. $149,500 (100%)
29. Zilmax tenderness modeling. 2009. M. Miller, C. Brooks, B. Johnson, R. Rathmann, **J. Starkey**. Intervet, Inc. $92,400 (19%)
30. Zilmax carcass and Warner-Bratzler shear tenderness. 2009. M. Miller, C. Brooks, B. Johnson, R. Rathmann, **J. Starkey**. Intervet, Inc. $46,800 (19%)

Grants Submitted – Not Funded

1. Assessing immune-mediated changes in broiler chicken gut development: implications for growth efficiency. 2022. C. W. Starkey, **J. D. Starkey**, S. J. Rochell. USDA NIFA-AFRI Improved Nutritional Performance, Growth, and Lactation of Animals Program A1231. $650,000 (40%)
2. Role of dietary arginine supplementation on satellite cell function and angiogenesis in breast muscle tissue aimed at decreasing the severity of Wooden Breast in broiler chickens. J. J. Flees, C. W. Starkey, and **J. D. Starkey**. $103,757 (50%)
3. Spatial and Temporal Development of the Broiler Chicken Gastrointestinal Innate Immune System. 2021. C. W. Starkey and **J. D. Starkey**. $650,000 (50%)
4. Role of Incubation Conditions in the Broiler Chicken Wooden Breast Myopathy. 2021. **J. D. Starkey** and C. W. Starkey. USDA NIFA-AFRI Foundational Animal Nutrition, Growth and Lactation Program A1231. $650,000 (60%)
5. Development of the Broiler Chicken Gastrointestinal Immune System in Antibiotic-Free Production Systems. 2019. C. W. Starkey and **J. D. Starkey**. USDA NIFA-AFRI Diseases of Agricultural Animals Program A1221. $500,000 (40%)

6. Impact of controlled atmosphere stunning on broiler chicken physiological responses and meat quality. 2019. D. V. Bourassa and **J. D. Starkey**. USDA NIFA-AFRI Welfare and Well-being of Agricultural Animals Program A1251. $312,548 (50%)
7. A Transdisciplinary Approach to Secure the Safety of the Food Supply System while Protecting the Environment. 2019. K. Macklin., et al., **J. D. Starkey**. USDA-NIFA Sustainable Agricultural Systems. $9,550,000 (0.5%)
8. Effect of dietary protein source and litter condition on broiler chicken gastrointestinal stem cell activity. 2019. **J. D. Starkey** and C. W. Starkey. US Poultry and Egg Association. $50,000. (50%)
9. Effect of dietary calcium concentration, particle size, and enzyme addition on broiler chicken growth performance and carcass parts yield. 2018. C. W. Starkey and **J. D. Starkey**. Adisseo, Inc. $187,057 (50%).
10. Semicarbazide Residues Formed by Antimicrobials. 2018. D. V. Bourassa, **J. D. Starkey,** and C. W. Starkey. USA Poultry and Egg Export Council. $389,815 (33%).
11. The effects of backgrounding cattle on summer annual forages on transportation stress and feedyard performance of cattle from the Southeast. 2018. C. L. Bratcher, K. Mullenix, and **J. D. Starkey**. Auburn University Intramural Grants Program. $50,000. (40%)
12. Impact of transport stress on beef cattle muscle satellite cell recruitment and differentiation. 2018. **J. D. Starkey** and C. L. Bratcher. Auburn University Intramural Grants Program. $19,800. (50%)
13. Quantification of amino oxidase enzyme expression in broilers. 2018. **J. D. Starkey** and C. W. Starkey. CJ Bio America. $90,000 (50%).
14. Poultry Science Undergraduate Research Training and Career Track Exposure at Auburn University. 2018-2023. C. W. Starkey and **J. D. Starkey**. USDA-NIFA. 499,967 (50%)
15. Physiological responses of broiler chickens following controlled atmosphere or electrical waterbath stunning. 2018. D. V. Bourassa and **J. D. Starkey**. US Poultry and Egg Assn. $50,000 (50%).
16. Optimal concentrations of isoleucine for broiler growth performance and meat yield. 2018. C. W. Starkey and **J. D. Starkey**. CJ America. $247,108 (50%).
17. The evaluation of specific inhibitors and feed additives on the incidence and severity of woody breast disease in broilers. 2018. **J. D. Starkey** and C. W. Starkey. Kemin, Inc. $159,403 (50%)
18. The effects of backgrounding cattle on summer annual forages on transportation stress and feedyard performance of cattle from the Southeast. 2018. C. L. Bratcher, K. Mullenix, and **J. D. Starkey**. Auburn University College of Agriculture Internal Hatch and Multistate Competitive Funding Program. $50,000. (40%)
19. Effect of betaGRO® on broiler chicken growth performance and carcass yield. 2017. **J. D. Starkey** and C. W. Starkey. Puretein Bio. $89,411 (50%)
20. An Interinstitutional and Interdisciplinary Partnership to Enhance Research and Education Capacities in Beef Cattle Production in the Southeast. 2017-2020. P. A. Lancaster, E. Walker, S. Duckett, and **J. D. Starkey**. UDSA-NIFA. $704,089 (27%)
21. Egg allergy understanding from a unique perspective: the hen producing the egg. 2016. P. Biga, C. W. Starkey, and **J. D. Starkey**. National Institutes of Health (NIH). $1,467,389 (60%)
22. An Interinstitutional and Interdisciplinary Partnership to Enhance Research and Education Capacities in Beef Cattle Production. 2016. P.A. Lancaster, W.E. McClain, and **J. D. Starkey**. USDA-NIFA. $299,810 (34%).
23. Survey of the Prevalence and Severity of Various Breast Myopathies in Commercial Broilers in the Southeastern United States. 2015. **J. D. Starkey**, S. F. Bilgili, W. A. Dozier, and L. J. Bauermeister. US Poultry and Egg Association. $43,523 (90%).
24. Vitamin D and Porcine Skeletal Muscle Growth and Development. **J. Starkey**. 2011. USDA-NIFA. $299,744 (100%).
25. The Role of Vitamin D in Skeletal Muscle and Adipose Tissue Development. 2011. NICHD, NHLBI, and USDA-NIFA. PAR-10-276. **J. Starkey**. $1,787,910 (100%)
26. Optimal Nutrition and Management in Integrated Production Systems to Improve Feed Efficiency of Growing and Finishing Beef Cattle. 2011. **J. Starkey**, M. Allan, M. Bauer, D. Blasi, J. Bormann, U. Desilva, J. Dillwith, G. Erickson, S. Hansen, B. Holland, G. Horn, B. Kegley, T. Klopfenstein, C.

Krehbiel, B. Kropp, P. Lancaster, D. Loy, R. Maddock, K. Maddock-Carlin, R. Mateescu, D. Moser, D, Nichols, C. Reinhardt, E. Titgemeyer, J. Wagner, A. Wertz-Lutz, T. Wickersham. USDA-AFRI. $5,000,000 (0.01%).

27. Influence of reproductive hormone status on marbling and skeletal muscle development of beef cattle. 2010. **J. Starkey**, T. Lawrence, and D. Lust. NCBA- National Cattlemen's Assoc. Foundation. $50,000 (80%)
28. Probiotic Influence on Obesity: Communication between Host Flora, Physiology, and Immune System in Disease Reduction. 2009. E. Karunasena, M. Brashears, L. Thompson, **J. Starkey**. USDA-NIFA. $497,313 (15%)

Gifts In-Kind Received

2015 to present Total = $401,000

Foster Farms, Adisseo, ADM Animal Nutrition, DSM Nutritional Products, Pilgrim's, Wayne-Sanderson Farms, Hubbard, LLC., Balchem Corp, Aviagen Group, S&G Poultry, Tyson Foods, Tilley Distribution, Cobb-Vantress, Inc., Pitman Farms

Publications

Underlined author name designates the work of or presentation by a student. ‡denotes an undergraduate student advisee. *denotes publication under maiden name (J. D. Dunn).

Published Refereed Manuscripts (48 total; 42 as faculty)

1. Polese, C., L. Wachholz, C. de Souza, N. Rohloff, Jr., G. L. Silva Tesser, R. A. Nunes, C. Eyng, J. D. Starkey, C. W. Starkey, J. L. Genova, and R. V. Nunes. 2024. Influence of light intensity, pre-harvest fasting, and storage time on 7 biochemical components in serum and plasma of broilers. R. Bras. Zootec. 54:e20240117. DOI 10.37496/rbz5420240117.
2. Rueda, M. S., J. D. Davis, J. L. Purswell, J. C. Campbell, C. M. Edge, and **J. D. Starkey**. 2024. Development and validation of a protocol to determine feed spillage from commercial broiler feeders. Appl. Eng. Agric. 41 (1). DOI: 10.13031/aea.16157.
3. De Souza, C., C. De Souza, J. Broch., G. Silva Tesser, R. Vianna Nunes, **J. D. Starkey**. 2024. Effect of arginine, glycine + serine concentrations, and guanidinoacetic acid supplementation in vegetable-based diets. Poult. Sci. 103:104105. DOI: 10.1016/j.psj.2024.104105
4. Rueda, M. S., S. Bonilla, C. de Souza, **J. D. Starkey**, C. W. Starkey, L. Mejia, and W. J. Pacheco. 2024. Evaluation of particle size and feed form on performance, carcass characteristics, nutrient digestibility, and gastrointestinal tract development of broilers at 39 d of age. Poult. Sci. 103:103437. DOI: 10.1016/j.psj.2024.103437
5. Gregg, C. R., Hutson, B. L., Flees, J. J., C. W. Starkey, **J. D. Starkey**. 2023. Comparing standard and physiological cell culture temperatures on in vitro proliferation and differentiation of primary broiler chicken Pectoralis major muscle satellite cells. Frontiers in Physiology: Avian Physiology. DOI: 10.3389/fphys.2023.1288809
6. Flees, J. J., A. J. Keel, C. R. Gregg, C. W. Starkey, and **J. D. Starkey**. 2023. Effects of light intensity and reduction of starter diet digestible lysine and metabolizable energy on broiler chicken growth performance, breast meat yield, and meat quality defects. Poult. Sci. Poult. Sci. 102. DOI: 10.1016/j.psj.2023.103222.
7. Gregg, C. R., Hutson, B. L., Flees, J. J., Z. S. Lowman, K. A. Estes, **J. D. Starkey**, and C. W. Starkey. 2023. Evaluation of increasing concentrations of supplemental choline chloride on modern broiler chicken growth performance and carcass characteristics. Animals. 13:1445. DOI: 10.3390/ani13091445
8. Reeves Pitts, M. A., H. R. Smith, E. C. Amerson, **J. D. Starkey**, C. W. Starkey, J. T. Sawyer, T. D. Brandebourg. 2023. Feeding ractopamine improves the growth performance and carcass characteristics of the lard-type Mangalica pig. Animals. 13:3857. DOI: 10.3390/ani13243857.

9. Abascal-Ponciano, G.A., S.F. Leiva, J. J. Flees, L. P. Avila, **J. D. Starkey**, and C.W. Starkey. 2022. Dietary 25-hydroxyvitamin D3 supplementation modulates intestinal cytokines in young broiler chickens. Front Vet Sci. 9:947276. DOI: 10.3389/fvets.2022.947276
10. Sandoval, J. L., D. E. Ventura, O. B. Fiallos, B. L. Anderson, J. C. Sparks, **J. D. Starkey**, C. W. Starkey. 2022. Efficacy and safety of a novel source of dietary 25-hydroxycholecalciferol in growing pigs. J. Anim. Sci. 100(9):skac260. DOI: 10.1093/jas/skac260.
11. Keel, A.J., A. J. Calderon, O. J. Tejeda, **J. D. Starkey**, and C. W. Starkey. 2022. Dietary protein source and litter condition alter broiler chicken intestinal macrophage and mitotically active cell populations. Front. Vet. Sci. 9:894587. DOI: 10.3389/fvets.2022.894587.
12. Avila, L. P., S. F. Leiva, G. A. Abascal-Ponciano, J. J. Flees, K. M. Sweeney, J. L. Wilson, K. J. Meloche, B. J. Turner, G. Litta, A. M. Waguespack-Levy, A. Pokoo-Aikins, C. W. Starkey, **J. D. Starkey**. 2022. Effect of combined maternal and post-hatch dietary 25-hydroxycholecalciferol supplementation on broiler chicken Pectoralis major muscle growth characteristics and satellite cell mitotic activity. J. Anim. Sci. 100(8):skac192. DOI: 10.1093/jas/skac192.
13. Gregg, C. R., O. J. Tejeda, L. F. Spencer, A. J. Calderon, D. V. Bourassa, **J. D. Starkey**, C. W. Starkey. 2022. Impacts of increasing additions of choline chloride on growth performance and carcass characteristics of broiler chickens reared to 66 days of age. Animals (Basel). 12(14):1808. DOI: 10.3390/ani12141808.
14. Sweeney, K. M., C. D. Aranibar, W. K. Kim, S. M. Williams, L. P. Avila, **J. D. Starkey**, C. W. Starkey, and J. L. Wilson. 2022. Impact of every-day versus skip-a-day feeding of broiler breeder pullets during rearing on body weight uniformity and reproductive performance. Poult. Sci. 101(8):101959. DOI: 10.1016/j.psj.2022.101959.
15. Flees, J.J., C. W. Starkey, and **J. D. Starkey**. 2022. Effect of different basal culture media and sera type combinations on primary broiler chicken muscle satellite cell heterogeneity during proliferation and differentiation. Animals (Basel). 12(11):1425. DOI: 10.3390/ani12111425.
16. Leiva, S. F., L. P. Avila, G. A. Abascal-Ponciano, J. J. Flees, K. M. Sweeney, J. L. Wilson, **J. D. Starkey**, and C. W. Starkey. 2022. Combined maternal and post-hatch dietary supplementation of 25-hydroxycholecalciferol alters early post-hatch broiler chicken duodenal macrophage and crypt cell populations and their mitotic activity. Front. Vet. Sci. 9:882566. DOI: 10.3389/fvets.2022.882566.
17. Avila, L. P., S. F. Leiva, G. A. Abascal-Ponciano, J. J. Flees, K. M. Sweeney, J. L. Wilson, B. J. Turner, G. Litta, A. M. Waguespack-Levy, A. Pokoo-Aikins, C. W. Starkey, **J. D. Starkey**. 2022. Combining maternal and post-hatch dietary 25-hydroxycholecalciferol supplementation on broiler chicken growth performance and carcass characteristics. Poultry. 1(2):111-124. DOI: 10.3390/poultry1020010.
18. Gregg, C. R., O. J. Tejeda, L. F. Spencer, A. J. Calderon, D. V. Bourassa, **J. D. Starkey**, C. W. Starkey. 2022. Effect of dietary choline chloride supplementation on growth performance and carcass characteristics of broiler chickens reared to 32 days of age. Poultry. 1(2), 66-73. DOI: 10.3390/poultry1020007.
19. Tejeda, O. J., K. J. Meloche, and **J. D. Starkey**. 2021. Effect of incubator tray location on broiler chicken growth performance, carcass part yields, and the meat quality defects wooden breast and white striping. Poult. Sci. 100:654-662. DOI: 10.1016/j.psj.2020.10.035.
20. Ferreira, T. Z., L. Kindlein, J. J. Flees, L. K. Shortnacy, S. L. Vieira, V. P. Nascimento, K. J. Meloche, and **J. D. Starkey**. 2020. Characterization of pectoralis major muscle satellite cell population heterogeneity, macrophage density, and collagen infiltration in broiler chickens affected by Wooden Breast. Frontiers in Physiology – Avian Physiology (Invited). eCollection 2020. https://DOI.org/10.3389/fphys.2020.00529.
21. Shortnacy, L. W. ‡, J. J. Flees, C. W. Starkey, and **J. D. Starkey**. 2020. Effect of the Wooden Breast myopathy on broiler chicken collagen and myogenic regulatory factor protein expression. AU J. Undergrad. Scholar.

22. Tejeda, O. J., A. J. Calderon‡, J. A. Arana‡, K. J. Meloche, and **J. D. Starkey**. 2019. Broiler chicken myofiber morphometrics and myogenic stem cell population heterogeneity. Poult. Sci. 98:4123-4130.
23. Vaughn, M. A., P. A. Lancaster, K. C. Roden, E. D. Sharman, C. R. Krehbiel, G. W. Horn, and **J. D. Starkey**. 2019. Effect of stocker management program on beef cattle skeletal muscle growth characteristics, satellite cell activity, and paracrine signaling impact on preadipocyte differentiation. J. Anim. Sci. Tech. 61:260-271.
24. Novak, T.E., S. L. Rodriguez-Zas, B.R Southey, **J. D. Starkey**, R. M. Stockler, G. F. Alfaro, and S. J. Moisa. 2019. Jersey steer ruminal papillae histology and nutrigenomics with diet changes. J. Anim. Physiol. Anim. Nutr. 103:1694-1707.
25. Keel, A. J. ‡, A. J. Calderon, O. J. Tejeda, **J. D. Starkey**, and C. W. Starkey. 2019. Effect of Dietary Protein Source and Litter Condition on Mitotically Active Cell and Macrophage Cell Density in the Duodenum of Broiler Chickens at Day 21. AU J. Undergrad. Scholar. http://our.auburn.edu/wp-content/uploads/2019/10/Andrew-Keel.pdf
26. Meloche, K. J., W.A. Dozier, III, and **J. D. Starkey**. 2018. Skeletal muscle growth characteristics and myogenic stem cell activity in broiler chickens affected by wooden breast. Poult. Sci. 97:4401-4414.
27. Knobel-Graves, S. M., J. C. Brooks, B. J. Johnson, **J. D. Starkey**, J. L. Beckett, J. M. Hodgen, J. P. Hutcheson, M. N. Streeter, C. L. Thomas, R. J. Rathmann, A. J. Garmyn, and M. F. Miller. 2016. Effect of vitamin D_3, zilpaterol hydrochloride supplementation, and postmortem aging on shear force measurements of three muscles in finishing beef steers. J. Anim. Sci. 94:2637-2647.
28. Lancaster, P.A., E. D. Sharman, G. W. Horn, C. R Krehbiel, J. W. Dilwith, and **J. D. Starkey**. 2015. Effect of rate of weight gain of steers during the stocker phase. IV. Rumen fermentation characteristics and expression of genes involved in substrate utilization for fatty acid synthesis in adipose tissues of growing-finishing beef cattle. J. Anim. Sci. 93:3055-3065
29. Hutton, K. C., M. A. Vaughn, B. J. Turner, and **J. D. Starkey**. 2014. Effect of vitamin D status improvement with 25-hydroxycholecalciferol on skeletal muscle growth characteristics and satellite cell activity in broiler chickens. J. Anim. Sci. 92:3291-3299.
30. **Starkey, J. D.** 2014. Invited Review. ASAS Triennial Growth Symposium – A role for vitamin D in skeletal muscle development and growth J. Anim. Sci. 92:887-892.
31. Tedford, J. L., Rodas-González, A., A. J. Garmyn, J. C. Brooks, B. J. Johnson, **J. D. Starkey**, G. O. Clark, A. J. Derington, J. A. Collins, and M. F. Miller. 2014. Pre- and Postharvest Product Safety: U.S. consumer perceptions of U.S. and Canadian beef quality grades. J. Anim. Sci. 92:3685-3692.
32. Lancaster, P.A., E. D. Sharman, G. W. Horn, C. R Krehbiel, and **J. D. Starkey**. 2014. Effect of rate of weight gain of steers during the stocker phase. III. Gene expression of adipose tissues and skeletal muscle in growing-finishing beef cattle. J. Anim. Sci. 92:1462-1472.
33. Hines, E. A., J. D. Coffey, C. W. Starkey, T. K. Chung, and **J. D. Starkey**. 2013. Improvement of maternal vitamin D status with 25-hydroxycholecalciferol positively impacts porcine fetal skeletal muscle development and myoblast activity. J. Anim. Sci. 91:4116-4122.
34. Sharman, E., P. Lancaster, C. McMurphy, G. Mafi, **J. Starkey**, C. Krehbiel, and G. Horn. 2013. Effect of rate of weight gain of steers during the stocker phase. II. Visceral organ mass and body composition of growing-finishing beef cattle. J. Anim. Sci. 91:2355-2366.
35. Sharman, E., P. Lancaster, C. McMurphy, A. Garmyn, B. Pye, G. Mafi, C. Goad, W. Phillips, **J. Starkey**, C. Krehbiel, and G. Horn. 2013. Effect of rate of weight gain of steers during the stocker phase. I. Growth, partitioning of fat among depots and carcass characteristics of growing-finishing beef cattle. J. Anim. Sci. 91:4322-4335.
36. Martin, J. N., J. C. Brooks, T. A. Brooks, J. F. Legako, **J. D. Starkey**, S. P. Jackson, and M. F. Miller. 2013. Storage length, storage temperature, and lean formulation influence the shelf-life and stability of traditionally packaged ground beef. Meat Sci. 95:495-502.
37. Coffey, J. D., E. A. Hines, **J. D. Starkey**, C. W. Starkey, and T. K. Chung. 2012. Feeding 25-hydroxycholecalciferol improves gilt reproductive performance and fetal vitamin D status. J. Anim. Sci. 90:3783-8.

38. O'Quinn, T. G., J. C. Brooks, R. J. Polkinghorne, A. J. Garmyn, B. J. Johnson, **J. D. Starkey**, R. J. Rathmann, and M. F. Miller. 2012. Consumer assessment of beef strip loin steaks of varying fat levels. J Anim. Sci. 90:626-34
39. Rodas-Gonzalez, A., S. B. Pflanzer, A. J. Garmyn, J. N. Martin, J. C. Brooks, S. M. Knobel, B. J. Johnson, **J. D. Starkey**, R. J. Rathmann, P. E. de Felicio, M. N. Streeter, D. A. Yates, J. M. Hodgen, J. P. Hutcheson, M. F. Miller. 2012. Effects of postmortem calcium chloride injection on meat palatability traits of strip loin steaks from cattle supplemented with or without zilpaterol hydrochloride. J. Anim. Sci. 90(10):3584-95.
40. Garmyn, A. J., S. M. Knobel, K. S. Spivey, L. F. Hightower, J. C. Brooks, B. J. Johnson, S. L. Parr, R. J. Rathmann, **J. D. Starkey**, D. A. Yates, J. M. Hodgen, J. P. Hutcheson, M. F. Miller. 2011. Warner-Bratzler and slice shear force measurements of three beef muscles in response to various aging periods following trenbolone acetate and estradiol implants and zilpaterol hydrochloride supplementation of finishing beef steers. J. Anim. Sci. 89:3783-3791.
41. Igo, J. L., J. C. Brooks, B. J. Johnson, **J. D. Starkey**, R. J. Rathmann, A. J. Garmyn, W. T. Nichols, J. P. Hutcheson, and M. F. Miller. 2011. Characterization of estrogen-trenbolone acetate implants on tenderness and consumer acceptability of beef under the effect of two aging times. J. Anim. Sci. 89:792-97.
42. **Starkey, J. D.**, M. Yamamoto, S. Yamamoto, D. J. Goldhamer. 2011. Skeletal muscle satellite cells do not spontaneously adopt adipogenic fates. J. Histochem. Cytochem. 59:33-46.
43. Collier, C. T., J. A. Carroll, M. A. Ballou, **J. D. Starkey**, and J. C. Sparks. 2011. Oral administration of *Saccharomyces cerevisiae boulardii* reduces mortality associated with immune and cortisol responses to *Escherichia coli* endotoxin in weaned pigs. J. Anim. Sci. 89:52-8.
44. Waylan, A. T., J. P. Kayser, D. P. Gnad, J. J. Higgins, **J. D. Starkey**, E. K. Sissom, J. C. Woodworth, and B. J. Johnson. 2005. Effects of L-carnitine on fetal growth and the IGF system in pigs. J. Anim. Sci. 83:1824-31.
45. Wang, X., S. R. Thomson, **J. D. Starkey**, J. L. Page, A. D. Ealy, and S. E. Johnson. 2004. Transforming growth factor beta-1 (TGF-β_1) is up-regulated by activated Raf in skeletal myoblasts but does not contribute to the differentiation-defective phenotype. J. Biol. Chem. 279:(4) 2528-2534.
46. Waylan, A. T., **J. D. Dunn***, B. J. Johnson, J. P. Kayser, and E. K. Sissom. 2004. Effect of flax supplementation and growth promotants on lipoprotein lipase and glycogenin messenger RNA concentrations in satellite cells and finishing cattle. J. Anim. Sci. 82:1868-1875.
47. **Dunn, J. D.***, B. J. Johnson, J. P. Kayser, A. T. Waylan, E. K. Sissom, and J. S. Drouillard. 2003. Effects of flax supplementation and a combined trenbolone acetate and estradiol implant on circulating insulin-like growth factor-I and muscle insulin-like growth factor-I messenger RNA levels in beef cattle. J. Anim. Sci. 81:3028-3034.
48. Pampusch, M. S., B. J. Johnson, M. E. White, M. R. Hathaway, **J. D. Dunn***, A. T. Waylan, and W. R. Dayton. 2003. Time course of changes in growth factor mRNA levels in muscle of steroid-implanted and non-implanted steers. J. Anim. Sci. 81:2733-2740.

Invited Research Presentations (24 total)

1. **Starkey, J. D.** DSM-firmenich Poultry Nexus Symposium. 25-OH D3 for Lifetime Productivity. 2024. Marco Island, FL. October 3, 2024.
2. **Starkey, J. D.** American Society of Animal Science Annual Meeting Growth and Development Symposium: Impacts of micronutrient supplementation on skeletal muscle growth and development. 2024. Impact of maternal and postnatal 25-hydroxycholecalciferol supplementation on porcine and avian satellite cell mitotic activity and skeletal muscle growth characteristics. Calgary, Alberta, Canada. July 23, 2024.
3. **Starkey, J. D.** Association of Mexican Nutritionists (AMENA) Latin-American Animal Nutrition Congress (CLANA). 2022. Role of skeletal muscle satellite cells in the broiler chicken Wooden Breast myopathy. Merida, Yucatan, Mexico. October 1, 2022.
4. **Starkey, J. D.** American Society of Animal Science Meat and Muscle Biology Symposium. 2020. Role of skeletal muscle satellite cells in the broiler chicken Wooden Breast meat quality defect. Madison, WI. July 20, 2020.
5. **Starkey, J. D.** Alabama Feed and Grain Association. 2018. Role of Muscle Stem Cells in the Broiler Wooden Breast Myopathy. Huntsville, AL. April 5, 2018.
6. **Starkey, J. D.** ALFA Poultry Grower's Meeting. 2018. Broiler Chicken Wooden "Woody" Breast (WB) Meat Quality Defect Research. Montgomery, AL. Feb. 7, 2018.
7. **Starkey, J. D.** Hubbard Genetics Incubation Round Table. 2018. Impact of Minor Incubation Temperature Variation on Broiler Performance and Carcass Parts Yield. Atlanta, GA. Jan. 31, 2018.
8. **Starkey, J. D.** Danish Swine Vitamin D Swine Round Table. 2014. Interaction among Immunology, Osteology, and Myogenesis in Swine. Copenhagen, Denmark. June 13, 2014.
9. **Starkey, J. D.** DSM Nutritional Products Iberian Swine Production Conference. 2014. Role of vitamin D in porcine skeletal muscle development and growth. Madrid, Spain. June 12, 2014.
10. **Starkey, J. D.** British Vitamin D and Myogenesis Workshop. Role of vitamin D in porcine and avian skeletal muscle development and growth. 2014. Heanor, Derbyshire, UK. June 10, 2014.
11. **Starkey, J. D.** DSM Nutritional Products European Poultry Conference. 2013. Role of vitamin D in broiler chicken skeletal muscle development and growth. Istanbul, Turkey. November 20, 2013.
12. **Starkey, J. D.** American Society of Animal Science Triennial Growth Symposium. 2013. The role of vitamin D in skeletal muscle development and growth. Indianapolis, IN. July 8, 2013.
13. **Starkey, J. D.** University of Arkansas Animal Science Research Seminar Series. 2013. Nutrition and the molecular regulation of skeletal muscle development and growth. Fayetteville, AR. May 14, 2013.
14. **Starkey, J. D.** DSM Nutritional Products European Pig Conference. 2012. Interaction among Immunology, Osteology, and Myogenesis in Swine. Poznan, Poland. September 26, 2012.
15. **Starkey, J. D.** DSM Nutritional Products Asia-Pacific Swine Research Tour. 2011. Interaction Among Immunity, Osteology, and Myogenesis. Melbourne, Australia; Tokyo, Japan; Daegu, South Korea; Tainan, Taiwan; Manila, Philippines; Bangkok, Thailand. September 2011.
21. **Starkey, J. D.** American Meat Science Association Reciprocal Meat Conference. Molecular techniques for investigating skeletal muscle growth. Lubbock, TX. June 22, 2010.
22. **Starkey, J. D.** Texas Tech University Nutrition, Growth and Physiology Seminar. 2010. Molecular Regulation of Skeletal Muscle Satellite Cell Developmental Potential. Lubbock, TX. January 26, 2010.
23. **Starkey, J. D.** Oklahoma State University Nutrition and Physiology Seminar. 2009. Molecular Regulation of Skeletal Muscle Satellite Cell Developmental Potential. Stillwater, OK. April 22, 2009.
24. **Starkey, J. D.** National Center for Disciplinary Research in Animal Physiology Seminar. 2009. Molecular Regulation of Skeletal Myogenesis. Santiago de Queretaro, Mexico. March 7, 2009.

Abstracts of Presentations at National and International Conferences (151 total; 137 as faculty)

1. Abascal-Ponciano, G. A., M. D. Boersma, A. J. Keel, C. W. Starkey, and **J. D. Starkey**. 2025. Effect of litter condition on the duodenal proteome of young broiler chickens. International Poultry Scientific Forum. Poult. Sci. 104 (E-suppl).
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4. Johnson, B. J., J. P. Kayser, **J. D. Dunn***, A. T. Waylan, S. S. Dritz, J. C. Nietfeld, and J. E. Minton. 2002. Effects of an acute enteric disease challenge on IGF-1 and IGFBP-3 gene expression in porcine skeletal muscle. SRP 897, Kan. Agri. Exp. Sta. pp. 48-52.

Professional Service Activities

- Auburn University (AU) Poultry Science Club Faculty Advisor, 2021 – present
- AU Poultry Science Department Undergraduate Program Officer, 2020 – present
- AU College of Agriculture (COA) Curriculum Committee Member, 2019 – present
- AU Poultry Science Department Teaching and Curriculum Committee Chair, 2019 – present
- AU Poultry Science Animal Physiologist Faculty Search Committee Chair, 2021 and 2022
- AU Poultry Science Department Graduate Student Admission Committee Member, 2020 – present
- AU Poultry Science Department Brewer Service Award Committee Chair, 2016 – present
- USDA NC1184 Hatch Multistate Project Alabama Station Lead, 2015 – present
- AU COA Faculty Mentoring Committee (5) Chair/Member, 2020 – present
- AU COA Dean's Award for Excellence in Undergraduate Student Mentoring Award Committee Member, 2019 – present

- AU Poultry Science Department Head Administrative Review Committee Member, 2023
- AU Faculty Senate Calendar and Schedules Committee Member, 2021 – 2024
- AU Poultry Science Department Interim Department Head Search Committee Member, 2023
- AU COA Dean Administrative Review Committee Member, 2024
- AU Poultry Science Student Recruiting Committee Member, 2018 – present
- AU Poultry Science Department Full-time Department Head Search Committee Member, 2023 – 2024
- AU COA Dean's Award for Excellence in Instruction Award Committee Member, 2019 – present
- Peer Reviewer for *Poultry Science, Journal of Animal Science, Journal of Steroid Biochemistry and Molecular Biology, Poultry, Animals, Methods, Histology and Histopathology, Animal, PLoS,* and *British Journal of Nutrition*
- AU Poultry Science Bioinformatics Faculty Search Committee Member, 2023 – present
- AU Poultry Science Immunologist Faculty Search Committee Member, 2023 – 2024
- AU Poultry Science Department Teaching and Curriculum Committee Member, 2014 – 2019
- AU Poultry Science Department Budget Advisor Committee Member, 2019 – present
- Auburn University Intramural Grants Program Review Panelist, 2020
- Southern Poultry Science Assoc./International Poultry Scientific Forum Management Session Moderator, 2018
- AU Lifetime Achievement Awards and Young Alumni Achievement Award Committee Member, 2020 – 2024
- USDA/NIFA/AFRI –A1231 Animal Nutrition, Growth & Lactation Grant Review Panelist, 2018 & 2020
- AU Poultry Science Faculty Peer Teaching Evaluator, 2020 – present
- Academic Mentor for 75 AU Poultry Science undergraduate students, 2018 – present
- Auburn University Animal Science Meat Science Faculty Search Committee, 2018
- AU Poultry Science Department Research Needs and Priorities Committee Member, 2014 – present
- AU Poultry Science Department Writing Committee Member, 2016 – present
- Poultry Science Association Annual Meeting Abstract Reviewer, 2018
- Southern Region SARE Grant Review Panel Member, 2017
- Poultry Science Association Meeting Molecular and Cell Biology Section Chair, 2017
- American Society of Animal Science Annual Meeting Abstract Reviewer, 2017
- Auburn University College of Agriculture Grant Review Panel Member, 2017
- Southern Region SARE Grant Review Panel Member, 2016
- USDA/NIFA/AFRI - A1361 Improving Food Quality Grant Review Panelist, 2016
- Academic Advisor for 13 AU Poultry Science undergraduate students, 2014 – 2018
- AU College of Agriculture Poultry Science Omelet Breakfast Volunteer Cook, 2014 – 2019
- Southern Poultry Science Assoc./International Poultry Scientific Forum Physiology Session Moderator, 2017
- American Society of Animal Science National Meeting Abstract Reviewer, 2017
- Auburn University Poultry Science Curriculum Revision Committee Co-chair, 2015 – 2017
- Auburn University Poultry Science Research Unit Committee, 2014 – present
- Auburn University Academic Honesty Committee – College of Ag Rep., 2014 – 2019
- Auburn University Scholarship Committee – College of Ag Rep., 2014 – 2017
- Poultry Science Association Hy-Line International Research Award Committee, 2015 – 2018
- Poultry Science Association Early Achievement Award Committee, 2015 – 2018
- AU Poultry Science Poultry Product Technology Faculty Search Committee, 2015
- AU Poultry Science Poultry Processing Extension Faculty Search Committee, 2015
- Southern Poultry Science Assoc./International Poultry Scientific Forum Student Research Competition Judge, 2015, 2017, 2019
- Poultry Science Association Graduate Student Research Competition Judge, 2015, 2017
- Texas Tech University Institutional Biosafety Committee Member, 2009 – 2012
- Texas Tech University Institutional Animal Care and Use Committee Member, 2009 – 2012
- TTU CASNR Marketing & Outreach Committee Member, 2010 – 2012
- Academic Advisor for 33 TTU Department of AFS undergraduates, 2009 – 2012

- TTU AFS Departmental Swine Biology Faculty Search Committee Member, 2011
- TTU AFS Departmental TTU Network Support Specialist, 2009 – 2012
- TTU AFS Departmental Lab Safety Committee Member, 2009 – 2012
- TTU AFS Departmental Award Nomination Committee Member, 2010 – 2012
- Texas 4-H Livestock Ambassador Short Course speaker, 2011
- Texas Youth Pork Leadership Tour Host and Speaker, 2011
- TTU Bob Albin Graduate Student Research Poster Competition Judge, 2009 – 2012
- TTU Quail-Tech Alliance Cooperating Scientist, 2009 – 2016