

RANJITH RAMANATHAN

ASSOCIATE PROFESSOR

LEO & KATHY NOLTENSMEYER ENDOWED RESEARCH PROFESSORSHIP

DEPARTMENT OF ANIMAL & FOOD SCIENCES

OKLAHOMA STATE UNIVERSITY

RANJITH RAMANATHAN AT A GLANCE

Appointment: 60% teaching and 40% research

Grants funded (research and teaching) and services.....	56 [\$5,445,368]
Research.....	47 [\$5,430,363]
Teaching	3 [\$6,500]
Services	6 [\$8,485]
Peer-reviewed publications.....	80
Abstracts presented (total: research & teaching).....	145
Teaching.....	19
Research.....	126
Grant panel services.....	19
Graduate student committees (total).....	69
As a committee chair.....	15
As a committee member.....	54
Invited talks (total).....	39
National and international.....	26
Regional.....	14
Undergraduates advised.....	102
Undergraduate research scholars mentored.....	33
High school research scholars.....	06
Professional activities/committees.....	68
Tenure and reappointment external reviewer.....	04
Number of manuscripts reviewed.....	343 [for 43 international journals]
Awards and honors.....	23
Number of courses taught.....	6

Research interests: *meat quality, mitochondria and meat color, myoglobin chemistry, meat waste and greenhouse gas emissions*

Teaching interests: *active learning, student retention, student engagement, high-risk students*

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Ranjith Ramanathan

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Education

Doctor of Philosophy in Animal Science, 2012
University of Connecticut, CT, USA
Master of Science in Animal Science, 2008
University of Connecticut, CT, USA
Bachelor of Veterinary and Animal Science, 2004
Kerala Agricultural University, India

Professional experience

Leo & Kathy Noltensmeyer Endowed Research Professorship
Oklahoma State University, 2019-present
Associate Professor, Department of Animal and Food Sciences
Oklahoma State University, 2018-present
Assistant Professor, Department of Animal Science
Oklahoma State University, 2012-2018
Graduate Research Assistant, Department of Animal Science
University of Connecticut, 2006-2012
Junior Research Fellow, 2004-2006
Center of Excellence in Meat Science and Technology
College of Veterinary and Animal Sciences
Kerala Agricultural University, India

Appointment

60% teaching and 40% research

AWARDS AND RECOGNITIONS

2020 Regents Distinguished Teaching Award, Oklahoma State University
2020 Distinguished Early Career Faculty Award, Oklahoma State University
2019 American Chemical Society, Agricultural and Food Chemistry Division Young Scientist Award
2019 American Meat Science Association, Distinguished Achievement Award
2019 Tyler Award, Department of Animal and Food Sciences, Oklahoma State University
2019 Leo & Kathy Noltensmeyer Endowed Research Professorship
2018 United States Department of Agriculture/Association of Public Land Grant University (APLU), Young Educator Award
2018 North American Colleges and Teachers of Agriculture (NACTA), Young Educator Award
2018 American Society of Animal Science (ASAS) Southern Section, Outstanding Young Animal Scientist – Researcher

- 2018 Alpha-Zeta Award for Outstanding College Agriculture and Natural Resources Teacher, Oklahoma State University
- 2017 American Society of Animal Science (ASAS) Southern Section, Teaching Award
- 2017 Leave the Ladder Down Award, Oklahoma State University (for mentoring and advising)
- 2015 Early Career Award, Excellence in Teaching, College of Agricultural Sciences and Natural Resources, Oklahoma State University
- 2012 Muscle Foods Division, Institute of Food Technologists, Best Volunteer Award
- 2012 Selected as a graduate student recorder at the Farm Animal Integrated Research (FAIR) Conference held in Baltimore, MD (a meeting to establish consensus on priorities for the future of animal research)
- 2011 Recipient of the North East Alliance Summer Research Program Graduate Student Award in Mentorship, Service, and Leadership
- 2011 Recipient of the Institute of Food Technologists, Graduate Student Scholarship, 2008, 2009, and 2011.
- 2011 Fellowship for mentoring in the Northeast Alliance at the University of Connecticut Summer Research Program for Under-represented minorities in 2008, 2009, 2010, and 2011.
- 2011 Muscle Foods Division, Institute of Food Technologists, Best Student Volunteer award
- 2010 Second prize for graduate student poster competition (Ph.D. Division) at the American Meat Science Association, Reciprocal Meat Conference, Lubbock, Texas
- 2009 First prize for oral presentation, Muscle Foods Division, Institute of Food Technologists annual meeting, Anaheim, California
- 2009 Recipient of JARVIS Products Scholarship for the Graduate Students in Meat Science, 2008 and 2009
- 2007 Second prize for graduate student poster competition (M.S. Division) at the American Meat Science Association, Reciprocal Meat Conference, Brookings, South Dakota.

GRANTS

GRANTS FUNDED

Research grant: Extramural support

1. **R. Ramanathan (PI)**, D. Piao, G. Mafi, and S. Suman. (2022-2026). Novel non-contact spectroscopy to ensure freshness in the beef supply chain. USDA/AFRI Competitive Grants, Novel Foods and Manufacturing Technologies Program. Total support awarded: \$605,500
¹School of Electrical and Computer Engineering, Oklahoma State University
2. S. Krishnan¹, **R. Ramanathan (Co-PI)**, and G. Mafi. (2022-2024). An innovative redox device to assess meat color and minimize food waste. USDA/AFRI Competitive Grants, Novel Foods and Manufacturing Technologies Program. Total support awarded: \$282,094
¹Department of Chemistry, Oklahoma State University
3. W. Osburn¹, **R. Ramanathan (Co-PI)**, G. Wu, C. R. Kerth, R. Miller, and C. Dass. (2022-2026). An amino acid alternative curing system. USDA/AFRI Competitive Grants, Novel Foods and Manufacturing Technologies Program. Total support awarded: \$553,710
¹Department of Animal Science, Texas A&M.

<u>Funded: Summary</u>	
<i>Research (PI)</i>	
Extramural	\$1,715,798
Intramural	\$133,146
Services	\$8,485
<i>Research (as Co-PI)</i>	
Extramural	\$3,079,073
Intramural	\$502,366
<i>Teaching (PI)</i>	
Total	\$6,500
<i>Services (PI)</i>	
Total	\$8,485
<i>Total support (PI & Co-PI)</i>	
	\$5,445,368

4. **R. Ramanathan (PI)**, T. Bowser, G. Mafi, Jadeja, and Pfeiffer. (2022-2024). Novel biodegradable active packaging film to improve color of dark-cutting beef. Oklahoma Center for Advancement in Science and Technology (OCAST) Competitive Grants. Total support awarded: \$90,000
5. P. Beck, J. Johnson, D. Lalman, Biggs, A. Foote, D. Hagen, **R. Ramanathan (Co-PI)**, B. Wilson, and Chase. (2022-2026). Does selection of beef cattle for growth and carcass traits impact post-weaning immunological phenotype and robustness traits? USDA/AFRI Competitive Grants. Total support awarded: \$798,856
6. M. Pfeiffer, G. Mafi, and **R. Ramanathan (Co-PI)**. (2021-2022). National Beef Quality Audit – 2021: In-plant survey of transportation, mobility, live cattle, harvest-floor assessments, and carcass characteristics of fed steers and heifers and market cows and bulls – Oklahoma State University, National Cattlemen’s Beef Association. Total support awarded: \$25,000
7. M. Pfeiffer, G. Mafi, and **R. Ramanathan (Co-PI)**. (2021-2022). Oklahoma Beef Council/National Cattlemen’s Beef Association. Oklahoma State University – Meat Science graduate student research assistantship. Total support awarded: \$20,000
8. Pfeiffer, M., Mafi, G., and **R. Ramanathan (Co-PI)**. 2021-2022. National Beef Quality Audit - 2021 (Phase 1: Face-to-Face Interviews). National Cattlemen's Beef Association, Total support awarded: \$9,000
9. **R. Ramanathan (PI)**, D. Hagen, S. Hartson, and G. Mafi. (2021-2026). Multi-disciplinary approach to train next-generation food and animal science leaders in integrated omics. USDA-National Needs Fellowship. Total support awarded: \$238,500
10. G. G. Mafi and **R. Ramanathan**. (2020-2023). Food packaging and preservation. Multisorb Technologies, total funded: \$244,262
11. **R. Ramanathan (PI)**, G. G. Mafi. (2019-2022). Evaluation of process on meat related to color. Empirical Foods Inc. Total support awarded: \$277,400
12. G. G. Mafi and **R. Ramanathan (Co-PI)**. (2020-2021). Meat Science Graduate Student Research Assistantship. Oklahoma Beef Council, total funded: \$20,000
13. **R. Ramanathan (PI)**, G. G. Mafi, D. L. VanOverbeke, and R. Jadeja. (2018-2020). Novel nitrite-embedded packaging to improve the color of dark-cutting beef, Oklahoma Center for the Advancement of Science and Technology. Total support awarded: \$ 90,000.
14. **R. Ramanathan (PI)**, A. Pezeshki, S. Carter, G. G. Mafi, D. Lalman, C. Richards, and D. L. VanOverbeke. (2018-2019). Seahorse XFp Oxygen analyzer to enhance mitochondrial research capabilities in meat quality studies. USDA/AFRI Competitive Grants Program. Total support awarded: \$22,832. Equal matching funds from Drs. Owens and Rusk.
15. A. Pezeshki, **R. Ramanathan (Co-PI)**, S. Carter, P. Chelikani, and E. Lucas. (2018-2020). Improving the growth performance of nursery pigs with low protein diets supplemented with both crystalline and branched-chain amino acids. USDA/AFRI Competitive Grants Program. Total support awarded: \$150,000.
16. G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan (Co-PI)**. (2018-2019). Oklahoma Beef Council/National Cattlemen’s Beef Association. Oklahoma State University – Meat Science graduate student research assistantship. Total support awarded: \$15,000
17. **R. Ramanathan (PI)**, S. D. Hartson¹, G. G. Mafi, and D. L. VanOverbeke. (2016-2020). Characterizing the biochemical mechanisms governing color of dark cutting beef. USDA/AFRI Competitive Grants Program. Total support awarded: \$149,980
¹Department of Biochemistry and Molecular Biology, Oklahoma State University
18. **R. Ramanathan (PI)** and J. Dillwith¹. (2013-2016). Application of metabolomics to determine the interrelationship between postmortem metabolite profile and beef color. USDA/AFRI Competitive Grants Program. Total support awarded: \$146,586

¹Department of Entomology and Plant Pathology, Oklahoma State University

19. **R. Ramanathan (PI)**, G. G. Mafi, D. L. VanOverbeke, and D. Jaroni. (2015-2017). Enhancing the value of dark-cutting beef. Oklahoma Applied Research Support, Oklahoma Center for the Advancement of Science and Technology. Total support awarded: \$ 90,000
20. D. Lin¹, S. Clarke, E. Lucas, B. Smith, **R. Ramanathan (Co-PI)**. (2015-2017). Egg xanthophylls prevent chronic inflammation in type 2 diabetes. USDA/AFRI Competitive Grants Program. Total support awarded: \$149,998. ¹Department of Nutritional Sciences, Oklahoma State University
21. G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan (Co-PI)**. (2016-2017). Oklahoma Beef Council/National Cattlemen's Beef Association. Oklahoma State University – Meat Science graduate student research assistantship. Total support awarded: \$15,000
22. D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan (Co-PI)**. (2015). Bone-in and boneless pork retail stability test. National Beef Packing Company. Total support awarded: \$13,918
23. G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan (Co-PI)**. (2015-2016). Oklahoma Beef Council/National Cattlemen's Beef Association. Oklahoma State University – Meat Science graduate student research assistantship. Total support awarded: \$15,000
24. D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan (Co-PI)**. (2015-2016). Retail stability of packaged red meat. National Beef. Total support awarded: \$13,918
25. D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan (Co-PI)**. (2015-2019). Impact of oxygen scavengers on retail product performance and product sensory characteristics. Multisorb Technologies. Total support awarded: \$389,435
26. D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan (Co-PI)**, C.R. Krehbiel, R. Mateescu, and C. Gifford. (2013-2014). USDA/NIFA/AFRI Foundational Program for Improving Food Quality. Instron 5943 Dual Column Tabletop Model Testing System. Total support awarded: \$17,300 and \$17,300 from the Department of Animal Science.
27. D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan (Co-PI)**. (2013-2014). Oklahoma Beef Council/National Cattlemen's Beef Association. Oklahoma State University – Meat Science graduate student research assistantship. Total support awarded: \$15,000

Research grant: Intramural support

28. **R. Ramanathan**. (2021). Awarded \$2,000 from the CASNR/OAES Undergraduate Research Scholar Support Program, Oklahoma State University (Paetyn Armstrong and Noah Jewell).
29. G. Zhang, L. Spicer, J. Deng, H. Jiang, D. Jaroni, J. Johnson, G. Mafi, **R. Ramanathan**, P. Muriana, R. Jadeja, and U. DeSilva. (2020). Replacement of a Steam Sterilizer in the AFS Core Research Lab, Renovation of Critical Research Facilities, Oklahoma State University, Total support: \$34,433
30. **R. Ramanathan**. (2020). Awarded \$2,000 from the CASNR/OAES Undergraduate Research Scholar Support Program, Oklahoma State University.
31. **R. Ramanathan**. (2020). Awarded \$1,000 from the Wentz Research Scholar Support Program (Madeline Scott and Mandy Lawson), Oklahoma State University.
32. **R. Ramanathan**. (2020). OSU Ferguson College of Agriculture Sitlington Enriched Graduate Scholarship Program. Sitlington Enriched Graduate Scholarship to supplement the stipend of a doctoral student. 08/01/2020 – 07/31/2023. Total support: \$15,000.
33. **R. Ramanathan**. (2019-present). Leo & Kathy Noltensmeyer Endowed Research Professorship, Oklahoma State University, 2019-present

34. **R. Ramanathan.** (2019). Awarded \$2,000 from the CASNR/OAES Undergraduate Research Scholar Support Program, Oklahoma State University.
35. **R. Ramanathan.** (2018). Awarded \$500 from the Wentz Research Scholar Support Program (Emmy Bechtold), Oklahoma State University.
36. **R. Ramanathan.** (2018). Awarded \$3,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Emmy Bechtold, Rob Walderman, and Taylor Price), Oklahoma State University.
37. **R. Ramanathan.** (2017). Awarded \$5,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Abby Bechtold, Emmy Bechtold, Haden Comstock, Lauren Janak, and Kiefer Peckham), Oklahoma State University.
38. S. P. Harimkar, H. D. Vora, J. Smay, R. Vaidyanathan, J. Kidd, D. Brunson, R. Sharda, M. Kamath, R. Taylor, X. Jin, J. Manimala, S. Madihally, A. Ranjan, J. Shah, C. Yang, R. Jadeja, D. Jaroni, **R. Ramanathan,** Qi. Wang, T. Bowser, D. Bellmer, and A. Alexander. (2017). Laser-Aided Metal Additive Manufacturing Multi-User Core Facility, Office of the Vice President of Research – Oklahoma State University. Total support: \$336,000
39. **R. Ramanathan.** (2016). Awarded \$2,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Yiling Ke and Kiefer Peckham), Oklahoma State University.
40. **R. Ramanathan,** G. G. Mafi, and D. L. VanOverbeke. (2016). Mass Profiler Metabolomics software to enhance metabolomics data analysis capabilities. Funds for purchasing this equipment, in part, were provided by Drs. Owens and Rusk. Total internal support: \$10,654
41. **R. Ramanathan.** (2015). Awarded \$1,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Yiling Ke), Oklahoma State University.
42. **R. Ramanathan.** (2014). Awarded \$1,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Courtney Elroy), Oklahoma State University.
43. **R. Ramanathan.** (2014). Awarded \$500 from the Wentz Research Scholar Support Program (Shelby Spring), Oklahoma State University.
44. G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan.** (2014). Food Scan to enhance research capabilities in the Food Science program. The funds for purchasing this equipment were provided by Drs. Rusk, Edelson, Escoubas, and Tucker. Internal support. Total support: \$80,000
45. **R. Ramanathan.** (2013). Awarded \$2,000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Shelby Spring), Oklahoma State University.
46. **R. Ramanathan.** (2013). Awarded \$500 from the Wentz Research Scholar Support Program (Nick Elroy), Oklahoma State University.
47. **R. Ramanathan.** (2012). Awarded \$1000 from the CASNR/OAES Undergraduate Research Scholar Support Program (Nick Elroy), Oklahoma State University.

Teaching grant

48. **R. Ramanathan (PI).** (2018). Association of Public Land Grant University, USDA New Teacher Award. Total award: \$2,000
49. **R. Ramanathan (PI)** and N. Hettiarachchy¹. (2017-2018). Use of interactive simulation models to promote and enhance student engagement in a food science class. Association of Public and Land-Grant Universities. Total support awarded: \$3,000
¹Department of Food Science, University of Arkansas.

50. **R. Ramanathan (PI)** and D. L. VanOverbeke. (2014-2015). Use of high and low technology to enhance student responses in introductory Food Science class. The Provost Research Teaching Grant, Oklahoma State University. Total support awarded: \$1,500

Services and collaborative research

51. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke. (2017). Beef color issues, Beef Products Inc., Dakota Dunes, SD. Total amount for laboratory analysis, \$3,240

52. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke. (2016). Beef color issues, Beef Products Inc., Dakota Dunes, SD. Total amount for laboratory analysis, \$900

53. **R. Ramanathan**. (2015). Persistent pinking in cooked Italian sausage, Standard Meat Company, Dallas, TX. Total amount for laboratory analysis, \$500

54. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke (2015). Proteomics analysis of chicken breast myopathies. University of Arkansas, Department of Poultry Science, \$1,350

55. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke (2015). Investigating the potential of probiotic metabolites to improve meat quality. University of Minnesota, Department of Animal Science, \$2,000

56. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke (2015). Effects of water- and oil-soluble rosemary on ground beef color. Kalsec, Kalamazoo, MI. \$495

GRADUATE STUDENT ADVISING

As a committee chair

	Name of the student	Degree	Thesis title	Status
1.	Andrea English	MS in Food Science	Understanding the mechanism of failure to bloom in dark-cutting beef <i>Currently working as a Scientist at Cargill.</i>	Graduated, May 2015 <i>Completed Ph.D. at Texas Tech University.</i>
2.	Blanchefort Djimsa (Fulbright Research Scholar)	MS in Food Science	Fluorescent properties of myoglobin during heat-induced denaturation <i>Currently working as a Post-Doc</i>	Graduated, May 2016 <i>Completed Ph.D. at Colorado State University.</i>
3.	Anupam Abraham	MS in Animal Science	Application of metabolomics to determine the interrelationship between postmortem metabolite profile and beef color <i>Currently pursuing Ph.D. at Aarhus University, Denmark</i>	Graduated, Dec 2016
4.	Kendra Wills	MS in Animal Science	Enhancing the value of dark-cutting beef	Graduated, May 2017 <i>Completed Agricultural Law at Oklahoma</i>

				<i>Christian University</i>
5.	Rachel Mitacek	MS in Food Science	Effects of aging on the metabolite profile	Graduated, Dec 2017 <i>Currently pursuing Ph.D. at the University of Minnesota.</i>
6.	Frank Kiyimba	MS in Animal Science	Mitochondrial functional differences in dark-cutting and normal beef	Graduated, Dec 2019
7.	Morgan Denzer	MS in Food Science	Dark-cutting beef and nitrite packaging	Graduated, May 2020
8.	Thiago Belem	MS in Food Science	Effects of aging on beef color	Graduated, May 2020
9.	Taylor Price	MS in Food Science	Meat discoloration losses	Graduated, May 2021
10.	Frank Kiyimba	Ph.D. in Animal Science	Mitochondria and meat color	Anticipated graduation 2022
11.	Cole Reesman	MS in Food Science	Packing to improve dark-cutting color	Anticipated graduation 2022
12.	Morgan Denzer	Ph.D. in Food Science	Role of mitochondria in metmyoglobin reduction	Anticipated graduation 2023
13.	Trinity Smith	MS in Food Science	Meat processing	Anticipated graduation 2023
14.	Noah Jewell	MS in Food Science	Cooked meat and packaging qualities	Anticipated graduation 2024
15.	Keayla Harr (co-chairing)	Ph.D. in Animal Science	Meat metabolomics	Anticipated graduation 2025

As a committee member

	Name of the student	Degree	Thesis title	Status
16.	KatieRose McCullough	MS in Food Science	Effects of bone-in vs. boneless and whole muscle vs. individual steak aging on eating quality of high-quality middle meats	Graduated, May 2013
17.	Kassie Winn	MS in Food Science	Production, carcass, and meat quality characteristics of commercial crossbred gilts and barrows fed two different diets	Graduated, May 2013

18.	Renee Kinsey	MS in Food Science	Effects of modified atmosphere packaging on retail color stability in fresh beef	Graduated, May 2013
19.	Rabia Javid	MS in Food Science	Assessment of fermented products and salt substitute on flavor profile of white bread and rheology	Graduated, July 2014
20.	Subhasree Goswami	MS in Food Science	Assessment of fermented products and salt substitutes on the flavor profile of white bread	Graduated, July 2014
21.	Venkata Pamu	MS in Food Science	Effect of different diffusion strategies on the extraction of sugar from sweet sorghum	Graduated, July 2014
22.	Bailey Harsh	MS in Food Science	Effects of technology use in beef production systems on meat quality, consumer palatability, and muscle dimensions of strip loins <i>Currently working as an Assistant Professor, University of Illinois</i>	Graduated, December 2014
23.	Raj Adhikari	MS in Food Science	Identification of gas-producing organisms isolated from vacuum-packaged retail beef products, incoming raw materials	Graduated, December 2014
24.	Paul Vijayakumar	Ph.D. in Animal Science	Bacteriocin of lactic acid bacteria as potential biopreservatives for RTE meats <i>Currently working as an Assistant Professor, University of Kentucky</i>	Graduated, December 2014
25.	Kass Pfeiffer	MS in Animal Science	Tenderness and sensory attributes of pasture versus grain-fed beef aged 14 and 28 days	Graduated, December 2015
26.	Sudhir Pasupuleti	MS in Food Science	Effect of fermented products (miso and tempeh) on sensory and physical properties of wheat flour tortilla	Graduated, July 2015
27.	Sabitri Gautam	MS in Food Science	Assessment of kefir and sourdough on the flavor profile, quality of white bread, and rheology of wheat dough	Graduated, July 2015

28.	Murthy Jonada	Ph.D. in Chemistry	Electrochemistry of protein detection	Graduated, May 2016
29.	Morgan Neilson	MS in Animal Science	Consumer preference of ground beef with varying percentages of finely textured beef	Graduated, May 2016
30.	Shantipriya Khadka	Ph.D. in Chemistry	Hydroxy monolith precursor for the preparation of organic polymer monolithic columns by post-polymerization modification with various surface retentive ligands for CEP and HPLC	Graduated, May 2016
31.	Katy Satee	MS in Animal Science	Effects of oxygen scavenger technology on visual appeal, microbiological counts, and lipid oxidation on ground beef and sirloin steaks	Graduated, Aug 2016
32.	Xi Chen	MS in Nutrition and Food Management <i>University of Central Oklahoma</i>	Fortification of yogurt with chickpea flour enhance the overall quality of yogurt	Graduated, May 2016
33.	Thiago Souza	Ph.D. in Food Science	Rheological properties for quality control of wheat and dry cake mixes	Graduated, May 2017
34.	Raja Nerimetla	Ph.D. in Chemistry	Voltage-driven bio-catalysis by membrane-bound liver enzymes	Graduated, May 2017
35.	Sagarika Bhargava	MS in Food Science	Carbon pre-filter for the removal of heavy metals from drinking water in developing areas	Graduated, May 2017
36.	Deepak Rajmohan	MS in Food Science	Use of ionic gelation to reduce perceived bitterness of spirulina protein	Graduated, May 2017
37.	Korbin Black	MS in Food Science	Alternative sur lie aged red wine	Graduated, May 2017
38.	Chance Billups	MS in Animal Science	Prediction of beef quality of steaks and carcasses using bioelectrical impedance analysis	Graduated, May 2017
39.	Manish Aryal	MS in Food Science	Microplate lethality assay to determine efficacy of commercial sanitizer for inactivating biofilms	Graduated, Dec 2017

40.	Ala Alharbi	Ph.D. in Food Science	Diet on calcium utilization	Graduated, May 2020
41.	Sabra Billups	MS in Food Science	Development of a novel antimicrobial ice application for meat grinder sanitation	Graduated, December 2018
42.	Talonie Lalonde	MS in Food Science		In progress
43.	Joyjit Saha	Ph.D. in Food Science	Application of bacteriophages to control Shiga toxigenic <i>Escherichia coli</i> in the meat	Graduated, May 2019
44.	Praveen Yerramsetti	Ph.D. in Food Science	Effect of liquid nitrogen and formulation concepts in low acid foods	Graduated, December 2018
45.	Carson Cooper	MS in Animal Science	Mineral supplements on piglet growth	Graduated, July 2018
46.	Morgan Pfeiffer	Ph.D. in Animal Science	Meat quality of grass and grain-fed cattle	Graduated, May 2019
47.	Ryan Feuz	Ph.D. in Agricultural Economics	Valuation for and marketing spillover of discolored beef	Graduated, May 2019
48.	Vaithilingam Rajendiran	Ph.D. in Chemistry	Electrochemiluminescence of alkaloid drugs using oxidized multiwalled carbon nanotubes	Graduated, Dec 2021
49.	Mallika Achanta	Ph.D. in Food Science	Development of a texturometer and shelf-life study of energy bar	Graduated, May 2019
50.	Cheyenne Edmundson	MS in Animal Science	Nitrite packaging and meat color	Graduated, Dec 2019
51.	Afton Sawyer	MS in Animal Science	Piglet growth and vitamin/mineral supplementation	Graduated, May 2019
52.	Laura Yoder	MS in Animal Science	Green tea and rosemary on ground beef color	Graduated, May 2020
53.	Macy Perry	MS in Animal Science	Oxygen scavengers and meat quality	Graduated, May 2020
54.	Meghan Fitzgerald	MS in Food Science	Good agricultural practices for aquaponics	Graduated Fall 2019
55.	Cedrick Shilli	Ph.D. in Animal Science	Growth performance of pigs with low protein supplemented with phytase	Graduated, Spring 2021
56.	Arjun Bhusal	MS in Food Science	Vegetable nitrates: isolation of nitrate-reducing bacteria	Graduated, Fall 2019

57.	Caitlin Karolenko	Ph.D. in Food Science		In progress
58.	Kundan Shah	MS in Food Science	Sanitizers on biofilm formation	Graduated, Fall 2020
59.	Conner McDaniel	Ph.D. in Food Science	Identifying evaluating antimicrobial interventions suitable for pecan and walnut processing	Graduated, Spring 2021
60.	Sreeram Mikkilineni	MS in Food Science	Properties of pome	Graduated, Spring 2021
61.	Akansha Sharma	Ph.D. in Chemistry		In progress
62.	Wilson Parker	MS in Food Science	Effect of aging on wine quality	Graduated, May 2020
63.	Mahesh Sivasubramanian	Ph.D. in Veterinary Biosciences		In progress
64.	Anna Carlock	MS in Animal Science		In progress
65.	Sham Amarendranath	MS in Food Science		In progress
66.	Carrie Meeks	MS in Food Science		In progress
67.	Anashka Sharma	Ph.D. in Chemistry		In progress
68.	Tori Roser	MS in Animal Science		In progress
69.	Grace Dewi	Ph.D. in Animal Science <i>University of Minnesota</i>		In progress

Graduate student awards/leadership activities under Ramanathan's mentorship

Student name	Type of degree	Award/honors/leadership activities
Andrea English (2013-2015)	Graduate student	<ul style="list-style-type: none"> • Outstanding MS student - Department of Animal Science • Placed first at the Whiteman competition, Department of Animal Science • Placed first at the Food & Agricultural Products Center Research Symposium • IFT Muscle Foods Division Student representative • Animal Science Graduate Student Association, President

Kendra Wills (2015-2017)	Graduate student	<ul style="list-style-type: none"> • Outstanding MS student - Department of Animal Science • Placed first at the Whiteman competition, Department of Animal Science • Placed first at the Food & Agricultural Products Center Research Symposium • Animal Science Graduate Student Association, Secretary • Oklahoma State University Graduate College Ambassador • The graduate and professional student government association representative.
Blanchefort Djimsa (2014-2016)	Graduate student	<ul style="list-style-type: none"> • Placed third in the Whiteman competition, Department of Animal Science • Placed third at the Food & Agricultural Products Center Research Symposium
Rachel Mitacek	Graduate student	<ul style="list-style-type: none"> • IFT Muscle Foods Division Student representative
Yiling Ke	Undergraduate student	<ul style="list-style-type: none"> • Selected for Summer Research Program in Food Science at Cornell University (Yiling was the first student from Oklahoma State University to attend this summer research program) • Published her research as a peer-reviewed manuscript in the Journal of Agricultural and Food Chemistry as a first author
Kendra Wills, 2015	Undergraduate student	<ul style="list-style-type: none"> • Placed second in the Undergraduate Research Competition, Reciprocal Meat Conference held at Lincoln, Nebraska
Nick Elroy, 2015	Undergraduate student	<ul style="list-style-type: none"> • Published her research as a peer-reviewed manuscript in Meat Science as a first author • Oklahoma Medical Research Foundation (OMRF) Fleming Scholar • Completed DVM degree
Shelby Spring, 2016	Undergraduate student	<ul style="list-style-type: none"> • Wentz Scholar, university-level research award • Currently pursuing graduate school
Emmy Bechtold, 2019	Undergraduate student	<ul style="list-style-type: none"> • Wentz Scholar, university-level research support
Paige Simons, 2018	High school student	<ul style="list-style-type: none"> • Placed third at the State Science & Engineering Fair held at the East Central University, Ada, Oklahoma
Lawson Veit, 2020	High school student	<ul style="list-style-type: none"> • First place at the regional science fair, Oklahoma
Morgan Denzer, 2018-present	Graduate student	<ul style="list-style-type: none"> • IFT Muscle Foods Division Student representative • Received Cleaver Award for Teaching, MS Division • Outstanding MS student – Department of Animal and Food Sciences • IFT Muscle Foods Division Best Poster Award, 2020
Frank Kiyimba	Graduate student	<ul style="list-style-type: none"> • Third place at the International Congress on Meat Science and Technology Ph.D. poster presentation, 2020
Mandy Lawson	Undergraduate student	<ul style="list-style-type: none"> • Wentz Scholar, university-level research award, 2020 • Third place at the International Congress on Meat Science and Technology undergraduate poster presentation, 2020

Maddy Scott	Undergraduate student	<ul style="list-style-type: none"> • Wentz Scholar, university-level research award, 2020 • Third place at the International Congress on Meat Science and Technology Ph.D. poster presentation, 2020
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Visiting scientist/graduate students supervised

1. Katherine Modrow (2021)
 - Visiting doctoral student from Texas A&M
 - Basic cured meat color research
2. Dr. Heena Sharma (2019)
 - Visiting scientist from the National Dairy Research Institute, India
 - Five months of training program funded by the World Bank
 - Completed research on metabolomics and yogurt quality
3. Bhaswati Chowdhury (2019)
 - Visiting student from the National Dairy Research Institute, India
 - Two months of training program funded by the World Bank
 - Research focused on the effects of temperature on the metabolite profile of yogurt
4. Aviral Agarwal (2019)
 - Visiting student from the National Dairy Research Institute, India
 - Two months of training program funded by the World Bank
 - Research focused on the effects of fat content on the metabolite profile of yogurt
5. Ronnchai Prommachart (2018)
 - Visiting student from Khon Kaen University, Thailand (Dr. Ryas, FAPC)
 - Six months of training program funded by the Government of Thailand
 - Completed research on black rice bran on ground beef quality
6. Dr. Naveena Maheswarappa (2018)
 - Visiting scientist from the National Research Center on Meats, India
 - Three months of training program funded by the Government of India
 - To gain training in metabolomics and proteomics research
7. Thiago Belem (2018), Visiting student from Univ De Sao Paulo, Brazil
 - Got hands-on training in mitochondrial analysis
 - Currently a graduate student in Ramanathan's lab
8. Kaylin Belskie (2013), Visiting graduate student, MS, University of Connecticut
 - Kaylin conducted her Master of Science Research at Oklahoma State University
 - Got hands-on training in mitochondrial research
 - This research was funded by the USDA National Research Initiative Competitive Grants Program involving the University of Connecticut and the University of Kentucky
 - Resulted in one abstract and two manuscripts in preparation
9. Mahesh Nair (2013), Visiting Ph.D. student, University of Kentucky
 - Got hands-on training in mitochondrial research
 - Resulted in one abstract and one manuscript
 - Currently an Assistant Professor at the Department of Animal Science, Colorado State University
 - Resulted in two abstracts and one peer-reviewed journal article

Honors thesis student

1. Meredith Bush (2020). Honors thesis reader. The Future is Fresh: Creating a fresh crop system for extended space flight.
2. Jessie Barns (2019). Honors thesis reader. Effect of water-based phytogetic supplement on growth performance of nursery pigs fed with low protein diets.
3. Abby Bechtold (2018). Honors thesis advisor. Comparison of oxidation differences between hemoglobin, myoglobin, and cytochrome *c*.
4. Macy Perry (2018). Honors thesis reader. Pomegranate rind extract limits ground beef discoloration and lipid oxidation.
5. Kendra Wills (2015). Honors thesis reader. Determine shelf-life, organoleptic, and sensory differences of suspended fresh® beef products versus 21 day aged fresh beef products.

UNDERGRADUATE & GRADUATE ADVISING/SCHOLAR DEVELOPMENT

1. The academic advisor for 102 undergraduate students, 2012-present
2. Food Science Club, faculty advisor, 2012-present

Undergraduate Research Scholars

1. **Nick Elroy (2012-2015)
 - *Oklahoma Medical Research Foundation (OMRF) Fleming Scholar*. Nick was the only student selected from Oklahoma State University in 2013
 - *Published his research as a first author in a peer-reviewed journal (Meat Science)*
 - Selected as a **Wentz Scholar**, 2013-2014 (university research support)
 - Awarded Wentz Leadership award, 2014
 - Animal Science Undergraduate Research Scholar 2013, 2014. Presented abstracts at Reciprocal Meat Conference (National level) and university level meetings
2. **Shelby Spring (2013-2016)
 - Animal Science Undergraduate Research Scholar (2013-2014)
 - **Wentz Research Scholar** (2014-2015); University research support.
 - Currently pursuing graduate studies in Animal Science at Oklahoma State University
3. Mollie Shelby (2013-2014)
 - Animal Science Undergraduate Research Scholar
4. Kaylee Price (2013-2014)
 - Animal Science Undergraduate Research Scholar
 - Presented abstracts at Reciprocal Meat Conference (national level) and university level meetings

<u>Summary</u>	
<i>Undergraduate academic advising</i>	102
<i>Undergraduate research scholars</i>	33
Wentz Research Scholars	7
Animal Science Research Scholars	14
Grant funded research scholars	15
Pre-service science scholars	2
Summer research scholar	1
High school research scholars	6
<i>Graduate students</i>	
Committee chair	15
Committee member	54

<u>Impact: Undergraduate & graduate students</u>	
<i>Peer reviewed publications</i>	9
<i>National award</i>	4
<i>Abstracts published</i>	60
<i>Department/university awards</i>	6
<i>Leadership roles</i>	5
<i>Manuscript in preparation</i>	4
**19 undergraduate research scholars are pursuing graduate /professional school	

5. Grace Anthony (2014-2014)
 - Animal Science Undergraduate Research Scholar
6. Courtney Elroy (2014-2015)
 - Animal Science Undergraduate Research Scholar
 - Courtney's research focused on the effects of grape seed powder on bread quality
7. **Tania Melcina (2014-2014)
 - Biochemistry major, worked in my laboratory to get hands-on experience in food quality research
 - Completed Master of Business Administration degree
8. Regan Feuerhelm (2014-2015)
 - Grant-funded research scholar
9. Katelyn Brennecke (2014-2016)
 - Grant-funded research scholar
 - The research focused on the effects of rosemary on ground beef quality
10. **Rachel Mitacek (2014-2015; completed MS in Ramanathan's lab)
 - Grant-funded research focused on the effects of rosemary on ground beef quality.
11. **Kendra Will (2014-2015; completed MS in Ramanathan's lab)
 - Grant-funded research Scholar
 - The research focused on the use of RedoxSys to measure oxidation-reduction potential in beef
 - Presented poster at the Reciprocal Meat Conference, June 2015 and also *awarded second place at the Reciprocal Meat Conference Undergraduate Poster Completion, Lincoln, NE*
12. Taylor Anderson (2014-2015)
 - Grant-funded research scholar
13. **Yiling Ke (2014-2017)
 - Animal Science Undergraduate Research Scholar
 - Yiling's research focused on the effects of mitochondria on meat quality
 - Award **Wentz Research Scholar**
 - Presented an abstract at Reciprocal Meat Conference, 2016
 - *Selected for Summer Research Program in Food Science at Cornell University (Yiling was the first student from Oklahoma State University to attend this summer research program).*
 - *Published her research as a peer-reviewed manuscript in the Journal of Agricultural and Food Chemistry as a first author*
14. Kiefer Peckham (2016- 2018)
 - Animal Science Undergraduate Research Scholar
 - Kiefer's research focused on the effects of enzymes on meat quality
15. **Ian Field (2016-2017)
 - Grant-funded undergraduate research scholar
 - Biochemistry major, research focus on the effects of storage on mitochondrial function
 - Currently in medical school
16. **Collin Mowery (2016-2018; plan to pursue medical school)
 - Grant-funded undergraduate research scholar
 - Biochemistry major, research focus on the effects of pomegranate rind extract on mitochondrial function
 - Currently attending University of Oklahoma Medical School, MD program
17. Lauren Janek (2016-2018)

- Animal Science Undergraduate Research Scholar
 - Lauren's research focused on the effects of mitochondria on meat quality
18. **Alexis Gullic (2016-2017)
 - Currently pursuing a Doctor of Veterinary Medicine degree at the University of Missouri
 - Animal Science Undergraduate Research Scholar
 - Alexis's research focused on the effects of enzymes complexes within mitochondria on color
 19. **Haden Comstock (2016-2018)
 - Animal Science Undergraduate Research Scholar
 - Haden's research focused on the effects of non-enzymatic metmyoglobin reduction
 - Currently pursuing an MS at Purdue University
 20. **Abby Bechtold (2017-2018)
 - Animal Science Undergraduate Research Scholar
 - Abby's research focused on the comparison of myoglobin, hemoglobin, and cytochrome *c* oxidation
 - Abby also conducted honors thesis research
 21. **Emmy Bechtold (2017-2019)
 - *Wentz Research Scholar, University research award*
 - Animal Science Undergraduate Research Scholar
 - Emmy's research focused on the species-specific myoglobin oxidation
 22. **Clay Maynard (2017)
 - Grant-funded Undergraduate Research Scholar
 - Currently pursuing MS at University of Arkansas
 23. **Parker Wilson (2017-2018)
 - Grant-funded Undergraduate Research Scholar
 - Parker's research focused on the factors affecting myoglobin denaturation
 - Completed MS at Oklahoma State University
 24. **Taylor Price (2018-2019)
 - Grant-funded research scholar
 - Completed MS in Ramanathan's lab
 25. Robert Walderbach (2018)
 - Grant-funded research scholar
 26. **Carolina Quijada (2019-2020)
 - Grant-funded research scholar
 - Pursuing medical degree
 27. **Ty Montgomery (2019-2020)
 - Animal and Food Science research scholar
 - Currently pursuing an MS at Penn State University
 28. Madelyn Scott (2018-present)
 - *Wentz Research Scholar, University research award*
 29. **Mandy Lawson (2019-present)
 - *Wentz Research Scholar, University research award*
 - Currently pursuing a DVM degree at Oklahoma State University
 30. Natalie Hawkins (2020-present)

- Animal and Food Science research scholar
31. Paeytn Armstrong (2018-present)
 - *Wentz Research Scholar, University research award*
 32. **Noah Jewel (2018-2021)
 - Grant-funded research scholar
 - Currently pursuing MS degree in Ramanathan's lab
 33. Chace McKoy (2021-present)
 - Grant-funded research scholar

Undergraduate summer research scholar

1. Two-month paid summer research program. Talonnie Rodgers from Langston University (1890-Institute) received hands-on experience in meat biochemistry research. This research program was funded in part by Dr. Cynda Clary (Associate Dean, Academic Programs) and Dr. Clint Rusk (Head of the Department). The remaining support from my research fund.

High-school research scholars

1. Lawson Veit, Morrison High School, 2019-2022. Completed a project on Meat analogs and presented at the State Science Fair. *1st Place State Agriscience Fair, AgriScience Oklahoma State Finalist, National AgriScience Bronze Award, Tulsa State Fair 1st Place, 1st at the University of Central Oklahoma Regional Science Fair*
2. Callen Veit, Morrison High School, 2020-present. Completed project on antioxidants on ground beef. Placed Second at the Regional Science Fair.
3. Dean Lister, Lawton High School, Oklahoma, 2018-2019. Completed project on antioxidant on ground beef quality.
4. Paige Simons, Morrison High School, Morrison, Oklahoma, 2016
Placed third at the State Oklahoma State Science & Engineering Fair held at the East Central University, Ada. Her research focused on the role of cofactors in non-enzymatic metmyoglobin reduction.
5. Korbyne Sepeda, Morrison High School, Morrison, Oklahoma, 2016
Presented research at the 15th Annual Kansas, Nebraska, Oklahoma Junior Science, and Humanities Symposium. The abstract title was the effects of pH and antioxidants on ground beef color.
6. Three weeks paid summer research program. Upuli DeSilva from Stillwater High School got hands-on experience in basic laboratory techniques. This research program was supported by my Hatch fund, 2015.

Research mentor to pre-service science scholars

1. Blaine Matheson, Undergraduate research scholar, Biology Major, Science teacher, January 2015
Research title: Effects of temperature on fluorescence properties of oxymyoglobin
2. Nathan Desandre, Undergraduate research scholar, Biology Major, Science teacher, January 2015
Research title: Oxidation causes meat discoloration

REVIEWER AND GRANT PANEL RESPONSIBILITIES

Grant panel responsibilities

1. University of Connecticut, College of Agriculture, Health and Natural Resources Grant Proposal review, 2/2021
2. Grant review panelist for the 2021 National Science Foundation (NSF) Graduate Research Fellowship Program
3. Research Leaders 2025 Research Fellowship program, Teagasc, the Irish Agriculture, and Food Development Authority, 2020
4. Grant review panelist for the 2020 National Science Foundation (NSF) Graduate Research Fellowship Program
5. Grant review panelist for the 2020 USDA-Small Business Innovation Research Competitive Grants Program.
6. Grant review panelist for the 2019 National Science Foundation (NSF) Graduate Research Fellowship Program
7. New Harvest Grant Reviewer, 2019 (a non-profit organization that promote sustainable food system)
8. Grant review panelist for the 2017 National Science Foundation (NSF) Graduate Research Fellowship Program.
9. Grant review panelist for the 2017 USDA/NIFA Higher Education Challenge Grant Program.
10. Grant review panelist for the 2016 USDA-Small Business Innovation Research Competitive Grants Program.
11. Grant reviewer for the Ohio State University, Ohio Agricultural Research, and Development Center (OARDC) Research Enhancement Competitive Grants Program, 2016.
12. Grant review panelist for the 2015 National Science Foundation (NSF) Graduate Research Fellowship Program.
13. Grant reviewer for Agriculture Funding Consortium, The Alberta Livestock and Meat Agency (The Agricultural Funding Consortium is comprised of the 13 meat and agricultural-related organizations in Alberta, Canada), January 2015

<u>Summary</u>	
<i>Grant panel</i>	13
<i>Editorial board</i>	3
<i>Tenure & promotion</i>	4
<i>Reviewer</i>	
Number of journals	43
Manuscripts reviewed	343

Tenure and reappointment: external reviewer

1. Colorado State University, Department of Animal Science – 1 (2020)
2. University of Nevada, Department of Agriculture, Veterinary & Rangeland Sciences– 1 (2020)
3. University of Minnesota, Department of Animal Science – 1 (2019)
4. University of Kentucky, Department of Animal and Food Sciences – 1 (2017)

Editorial board

1. Meat Science (2020-present)
2. Meat and Muscle Biology, Official Journal of the American Meat Science Association (2019-present)
3. Austin Journal of Veterinary and Animal Husbandry (2014-present)

Ad-hoc reviewer (Teaching)

1. Reviewer for the National Center for Case Study Teaching in Science (2016-present)

Ad-hoc journal reviewer (Research)

Reviewed more than 343 manuscripts (2012-present) for 43 international journals. The number in the bracket represents the number of manuscripts reviewed for each journal.

	Journal name	No: of manuscripts reviewed
1	Animal Frontier	1
2	Animal Biotechnology	1
3	Animal Production Science	3
4	Asian Pacific Journal of Tropical Medicine	6
5	Austin Journal of Veterinary and Animal Husbandry	8
6	Canadian Journal of Animal Science	2
7	Comprehensive Reviews in Food Science and Food Safety	1
8	Color Research and Application	1
9	European Food Research and Technology	1
10	Food Bioscience	2
11	Foodborne Pathogens and Disease	2
12	Foods	1
13	Food Research International	27
14	Food Chemistry	10
15	Food Packaging and Shelf-life	2
16	Hydrocolloid	1
17	Innovative Food Science and Emerging Technologies	7
18	International Journal of Food Science & Technology	2
19	International Journal of Food Science	2
20	International Journal of Food Processing and Preservation	1
21	Journal of Agricultural and Food Chemistry	36
22	Journal of Animal Science	35
23	Journal of Applied Poultry Research	1
24	Journal of Aquatic Food Technology	1
25	Journal of Dairy Science	1
26	Journal of Food Engineering	2
27	Journal of Food Processing and Preservation	3
28	Journal of Food Science and Technology	2
29	Journal of Textural Studies	1
30	Journal of Food Science	11
31	Journal of Proteomics	2
32	Journal of Science of Food and Agriculture	4
33	LWT - Food Science & Technology	49
34	Meat Science	76
35	Meat and Muscle Biology	21

36	Molecular Reports	1
37	Packaging Technology and Science	1
38	Proteome Science	1
39	PLOS One	1
40	Poultry Science	8
41	Scientia Agricola	2
42	Translational Animal Science	2
43	World's Poultry Science Journal	4
	Total	346

Other reviewer/judging activities

1. Served as an abstract reviewer for the 2021 Reciprocal Meat Conference, Meat biochemistry, meat quality, and meat-processing category.
2. Served as a reviewer for the book proposal, Buffalo (*Bubalus bubalis*) Meat: Production, Processing & Quality, Springer Publisher, 2021.
3. Served as an abstract reviewer for the Southern Section American Society of Animal Science meeting, Meats section, 2021
4. Food Science assessment, undergraduate students, Oklahoma State University, 2020.
5. Biochemistry and Molecular Biology, undergraduate students' assessment, Oklahoma State University, 2017-2021.
6. Served as a judge for the 2020 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation. March 8.
7. Served as an abstract reviewer for the Southern Section American Society of Animal Science meeting, Meats section, 2020
8. Served as a judge for the International Congress on Meat Science and Technology, Doctoral Division poster competition, July 2020.
9. Served as a judge for the Oklahoma Louis Stokes Alliance for Minority Participation Annual Research Symposium, October 5, 2019.
10. Served as a judge for the 33rd Annual Whiteman Award Competition, Oral presentation, Department of Animal Science, February 2019.
11. Served as a judge for the 2019 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation. March 8.
12. Served as an abstract reviewer for the Southern Section American Society of Animal Science meeting, Meats section, 2019
13. Served as a judge for the Oklahoma State University Collegiate FFA Speech and Parliamentary Procedure Contest, April 4, 2019
14. Served as a judge for the 2018 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation. March 8.
15. Served as a judge for the 32nd Annual Whiteman Award Competition, Oral presentation, Department of Animal Science, February 18, 2018.

16. Served as an abstract reviewer for the Southern Section American Society of Animal Science meeting, Meats section, 2018
17. Served as a reviewer for the 63rd International Congress of Meat Science and Technology held in Ireland, Cork, Ireland, reviewed 28 abstracts in the muscle biochemistry category, April 2017
18. Served as a judge for the 2017 Institute of Food Technologists Annual Meeting, Muscle Foods Division Graduate Research Paper competition.
19. Reviewed 12 abstracts for the 2017 Institute of Food Technologists Annual Meeting, Technical Research Paper, Muscle Foods Division.
20. Served as a judge for the 2017 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation. March 4, 2017.
21. Reviewed 26 abstracts for the 2017 American Meat Science Association Reciprocal Meat Conference.
22. Served as a judge for the 30th Annual Whiteman Award Competition, Oral presentation, Department of Animal Science, February 18, 2016.
23. Reviewed 16 abstracts for the 2016 Institute of Food Technologists Annual Meeting, Technical Research Paper, Muscle Foods Division.
24. Served as a judge for the 2016 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation, March 4, 2016.
25. Reviewed 26 abstracts for the 2016 Reciprocal Meat Conference, Meat biochemistry, meat quality, and meat-processing category.
26. Reviewed 14 abstracts for the 2015 Institute of Food Technologists Annual Meeting, Technical Research Paper, Muscle Foods Division.
27. Served as a judge for the 2015 Food Science Research Symposium poster presentation, University of Central Oklahoma, May 1, 2015.
28. Served as a judge for the Food & Agricultural Products Center Research Symposium, Poster presentation, February 17, 2015.
29. Served as a judge for the 29th Annual Whiteman Award Competition, Oral presentation, Department of Animal Science, February 19, 2015.
30. Served as a judge for the 26th Annual Research Symposium, Oklahoma State University, Oral presentation for undergraduate students, February 20, 2015
31. Served as a judge for the 2015 Kansas-Nebraska-Oklahoma Regional Science and Humanities Symposium oral presentation. March 6, 2015
32. Judge for the Food Science Graduate Students Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium, February 18, 2014
33. Reviewed 26 abstracts for the 2014 Institute of Food Technologist Annual Meeting, Technical Research Paper, Muscle Foods Division
34. American Meat Science Association, Reciprocal Meat Conference, Meat Processing Achievement Award Committee, 2014
35. Reviewed 43 abstracts for the 2013 Institute of Food Technologists Annual Meeting, Technical Research Paper, Muscle Foods Division
36. Reviewed 15 abstracts for the 2013 Reciprocal Meat Conference, Meat biochemistry and meat processing category

37. Reviewed 15 abstracts for the 2012 Institute of Food Technologists Annual Meeting, Technical Research Paper, Muscle Foods Division
38. Reviewer for the Oklahoma Journal of Undergraduate Research
39. Institute of Food Technologists, Muscle Foods Division, Graduate paper competition committee, 2012- 2014
40. Reviewer for IFT Student Association quiz bowl questions, 2011

PUBLICATIONS (RESEARCH AND TEACHING)

RESEARCH: Book chapter

1. Ramanathan, R., Hunt, M. C., Price, T., & Mafi, G. G. (2020). Strategies to limit meat wastage: Focus on meat discoloration. In *Advances in Food and Nutrition Research*. doi:10.1016/bs.afnr.2020.08.002
2. **R. Ramanathan**, G. G. Mafi, L. Yoder, M. Perry, M. Pfeiffer, D. L. VanOverbeke, and N. B. Maheswarappa. (2020). Biochemical changes of postmortem meat during aging process and strategies to improve the meat quality. Book title: *Meat Quality Analysis: Advanced Evaluation Methods, Techniques and Technologies*. Publisher: Academic Press, Elsevier Inc., USA. Pages 67-80.
3. R. A. Mancini and **R. Ramanathan**. (2020). Molecular basis of meat color. Book title: *Meat Quality Analysis: Advanced Evaluation Methods, Techniques, and Technologies*. Publisher: Academic Press, Elsevier Inc., USA. Page 117-129. <https://doi.org/10.1016/B978-0-12-819233-7.00008-2>
4. **R. Ramanathan** and R. A. Mancini. (2016). Beef color development and variation. In *Ensuring safety and quality in the production of beef*. Chapter 9, Volume 2 Quality. Editor: Professor Michael Dikeman. Burleigh Dodds Science Publishing Limited ISBN 978-1-78676-060-9, Cambridge, UK <http://dx.doi.org/10.19103/AS.2016.0009.09>

<u>Summary</u>	
Teaching	
Manuscripts in-preparation	2
Abstracts	19
Popular articles	1
Research	
Book chapter	4
Peer reviewed manuscripts	80
Manuscripts in-review	3
Abstracts	126
Proceeding and reports	4
Popular articles	6

RESEARCH: Peer-reviewed publications (Total = 80)

§ indicates underlined the first author is a graduate/undergraduate student/visiting scientist under Ram's supervision; ‡ indicates the corresponding author

1. Denzer, M., G. G. Mafi., D. L. VanOverbeke, and R. Ramanathan. (2022). Effects of repacking on nitrite-embedded beef color. *Meat Muscle Biol.* Accepted in-press, <https://doi.org/10.22175/mmb.12944>
2. Cassens, A.M., **R. Ramanathan**, D.L. VanOverbeke, and G.G. Mafi. (2021). Effects of Pork Quality Types, Packaging, and Degree of Doneness on Trained Sensory and Instrumental Tenderness, Color, and Consumer Perception. *Meat Muscle Biol.* 5(1). doi: 10.22175/mmb.11598.
3. Gagaoua, M., R.D. Warner, P. Purslow, **R. Ramanathan**, A.M. Mullen, et al. (2021). Dark-cutting beef: A brief review and an integromics meta-analysis at the proteome level to decipher the underlying pathways. *Meat Sci.* 181: 108611. doi: 10.1016/j.meatsci.2021.108611.
4. Hearn, K., M. Denzer, R. Mitacek, N.B. Maheswarappa, C. McDaniel, R. Jadeja, G. G. Mafi, and **R. Ramanathan**‡. (2021). Effects of Modified Atmospheric Packaging on Ground Chicken Color and Lipid Oxidation. *Meat Muscle Biol.* 5(1): 1–9. doi: 10.22175/mmb.12599.

5. §Kiyimba, F., S.D. Hartson, J. Rogers, D.L. VanOverbeke, G.G. Mafi, and **R. Ramanathan**[‡]. (2021). Changes in glycolytic and mitochondrial protein profiles regulates postmortem muscle acidification and oxygen consumption in dark-cutting beef. *J. Proteomics* 232: 104016. doi: 10.1016/j.jprot.2020.104016.
6. **Ramanathan, R.**, M. N. Nair, Y. Wang, S. Li, C.M. Beach, et al. (2021). Differential Abundance of Mitochondrial Proteome Influences the Color Stability of Beef Longissimus Lumborum and Psoas Major Muscles. *Meat Muscle Biol.* 5(1). doi: 10.22175/mmb.11705.
7. Sharma, H., and **R. Ramanathan**. (2021). Gas chromatography-mass spectrometry based metabolomic approach to investigate the changes in goat milk yoghurt during storage. *Food Res. Int.* 140(December 2020): 110072. doi: 10.1016/j.foodres.2020.110072.
8. Sharma, H., G.D. El Rassi, A. Lathrop, V.B. Dobрева, T.S. Belem, **R. Ramanathan**. (2021). Comparative analysis of metabolites in cow and goat milk yoghurt using GC–MS based untargeted metabolomics. *Int. Dairy J.* 117: 105016. doi: 10.1016/j.idairyj.2021.105016.
9. Yoder, L., D.L. VanOverbeke, **R. Ramanathan**, and G.G. Mafi. (2021). Effects of Rosemary and Green Tea Antioxidants on Ground Beef Patties in Traditional and Modified Atmosphere Packaging. *Meat Muscle Biol.* 5(1). doi: 10.22175/mmb.11697.
10. Feuz, R., Norwood, F. B., & **Ramanathan, R.** (2020). Do consumers have an appetite for discolored beef?. *Agribusiness*, 36(4), 631-652. doi:10.1002/agr.21651
11. **Ramanathan, R.**[‡], Hunt, M. C., Mancini, R. A., Nair, M., Denzer, M. L., Suman, S. P. & Mafi, G., (2020). Recent Updates in Meat Color Research: Integrating Traditional and High-Throughput Approaches. *Meat and Muscle Biology*, 4(2). doi:10.22175/mmb.9598
12. **Ramanathan, R.**[‡], Kiyimba, F., Gonzalez, J., Mafi, G., & Desilva, U. (2020). Impact of Up- And Downregulation of Metabolites and Mitochondrial Content on pH and Color of the Longissimus Muscle from Normal-pH and Dark-Cutting Beef. *Journal of Agricultural and Food Chemistry*, 68(27), 7194-7203. doi:10.1021/acs.jafc.0c01884
13. §Prommachart, R., Belem, T. S., Uriyapongson, S., Rayas-Duarte, P., Uriyapongson, J., & **Ramanathan, R.**[‡]. (2020). The effect of black rice water extract on surface color, lipid oxidation, microbial growth, and antioxidant activity of beef patties during chilled storage. *Meat Science*, 164. doi:10.1016/j.meatsci.2020.108091
14. Feuz, R., Norwood, F. B., & **Ramanathan, R.** (2020). The Spillover Effect of Marketing Discolored Beef on Consumer Preferences for Non-discolored Beef. *Journal of Agricultural and Applied Economics*, 52(1), 160-176. doi:10.1017/aae.2019.39
15. **Ramanathan, R.**[‡], Suman, S. P., & Faustman, C. (2020). Biomolecular Interactions Governing Fresh Meat Color in Post-mortem Skeletal Muscle: A Review. *Journal of Agricultural and Food Chemistry*. doi:10.1021/acs.jafc.9b08098
16. **Ramanathan, R.**[‡], Nair, Mahesh., Kiyimba, F., Denzer, M., Hearn, K., Price, T., Mafi, G. (2020). Integrated Omics Approaches in Meat Science Research. *J. Meat Sc.* 15, 1-12. doi : 10.5958/2581-6616.2020.00001.8
17. **R. Ramanathan**[‡], J. L. Lusk, R. Reuter, G. Mafi, and D. VanOverbeke. (2019). Consumer practices and risk factors that predispose to premature browning in cooked ground beef. *Meat and Mus Bio.* 3, 526-531.
18. §F. Kiyimba, T. Belem, M. Nair, J. Rogers, S. Hartson, G. Mafi, D. VanOverbeke, and **R. Ramanathan**[‡]. (2019). Effects of oxygen partial pressure on 4-hydroxy-2-nonenal induced oxymyoglobin oxidation. *Meat and Mus Bio.* 3, 367-374.
19. C. Zhai, K. Peckham, K. E. Belk, **R. Ramanathan**, and M. N. Nair. (2019). Carbon chain length of lipid oxidation products influence lactate dehydrogenase and NADH-dependent metmyoglobin reductase activity. *J. Ag. Food Chem.* 67, 13327-13332.

20. R. Feuz, B. Norwood, and **R. Ramanathan**. (2019). The spillover effect of marketing discolored beef on consumer preferences for non-discolored beef. *Agri. App. Econ.* 1-17.
 21. P. Yerramsetti, T. Bowser, and **R. Ramanathan**. (2019). Optimization of headspace pressure using liquid nitrogen in hot-packed BBQ sauce. *The Open Food Sci. J.* 11: 74-78.
 22. **R. Ramanathan**[‡], M.N. Nair, M.C. Hunt, & S.P. Suman. (2019). Mitochondrial functionality and beef colour: A review of recent research. *S. J. Anim. Sci.*, 49: 9-19.
 23. **R. Ramanathan**[‡], M. C. Hunt, A. R. English, G. G. Mafi, and D. L. VanOverbeke. (2019). Effects of aging, modified atmospheric packaging, and display time on metmyoglobin reducing activity and oxygen consumption of high-pH beef. *Meat Mus. Bio.* 3: 276-288.
 24. [§]R. M. Mitacek, J. Prenni, Y. Ke, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2019). Mitochondrial degeneration, depletion of NADH, and oxidative stress decrease color stability of wet-aged beef longissimus steaks. *J. Food Sci.* 84: 38-50.
 25. M.M. Pfeiffer, G.G. Mafi, **R. Ramanathan**, T.M. Neilson, and D.L. VanOverbeke. (2019). Frequencies and severity of injection-site lesions in muscles from rounds of cow carcasses. *Transl. Anim. Sci.* 3: 130-134.
 26. **R. Ramanathan**[‡] and R. A. Mancini. (2018). Role of mitochondria in beef color: A review. *Meat and Mus. Bio.* 2: 309-320.
 27. R. A. Mancini, K. Belskie, S. P. Suman, and **R. Ramanathan**[‡]. (2018). Muscle-specific mitochondrial functionality and its influence on fresh beef color stability. *J. Food Sci.* 83:2077-2082.
 28. X. Chen¹, M. Singh, K. Bhargava¹ and **R. Ramanathan**. (2018). Physico-chemical, Textural, and Sensory Effects of Chickpea (*Cicer arietinum*) Flour Fortification of Yogurt. *J. Ameri. Oil Chem. Society.* 95: 1041-1048.
- ¹Department of Human Environmental Sciences, University of Central Oklahoma; Ram served on Xi Chen's MS committee, and some part of Chen's research was conducted at Ramanathan's laboratory.
29. J. Saha, R. Jadeja, G. G. Mafi, J. Nelson, **R. Ramanathan**, and D. Jaroni. (2018). Modeling techniques for prediction of safe cooking times of mechanically tenderized beef steaks. *Meat Mus. Biolo.* 2: 180-188.
 30. **R. Ramanathan**[‡], R. M. Mitacek, S. D. Billups, R. Jadeja, M. M Pfeiffer, G. G. Mafi, and D. L. VanOverbeke. (2018). Novel nitrite-embedded packaging improves surface redness of dark-cutting longissimus steaks. *Transl. Anim. Sci.* 2: 135-143.
 31. [§]R. M. Mitacek, A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2018). Modified atmospheric packaging improves the surface color of dark-cutting beef. *Meat Mus. Bio.* 2:57-63.
 32. S. M. Depue, M. M. Neilson, J. L Lusk, G. Mafi, **R. Ramanathan**, D. VanOverbeke, and B. Norwood. (2018). Sensory evaluation of ground beef with varying levels of finely textured beef. *PLoS ONE* 13(1): e0190680.
 33. England, E. M., S. K. Matarneh, R. M. Mitacek, A. Abraham, **R. Ramanathan**, J. C. Wicks, H. Shi, T. L. Scheffler, E. M. Oliver, E. T. Helm, and D. E. Gerrard. (2018). Presence of oxygen and mitochondria in skeletal muscle early postmortem. *Meat Sci.* 139:97–106.
 34. [§]Y. Ke, R. M. Mitacek, A. Abraham, G. G. Mafi, D. L. VanOverbeke, U. DeSilva, and **R. Ramanathan**[‡]. (2017). Effects of muscle-specific oxidative stress on cytochrome c release and oxidation-reduction potential properties. *J. Ag. Food Chem.* 65:7749-7755.
 35. [§]A. Abraham, J. W. Dillwith, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2017). Metabolite profile differences between beef longissimus and psoas muscles during display. *Meat Mus. Bio.* 1:18-26.
 36. [§]K. M. Wills, R. M. Mitacek, G. G. Mafi, D. L. VanOverbeke, D. Jaroni, R. Jadeja, and **R. Ramanathan**[‡]. (2017). Improving the lean muscle color of dark-cutting beef by aging, antioxidant-enhancement, and modified atmospheric packaging. *J. Anim. Sci.* 95:5378-5387.

37. V. A. Kuttappan, W. Bottje, **R. Ramanathan**, S. D. Hartson, C. N. Coon, B. W. Kong, C. M. Owens, M. Vazquez-Añon, and B. M. Hargis. (2017). Proteomic analysis reveals changes in carbohydrate and protein metabolism associated with broiler breast myopathy. *Poult. Sci.* 96:2992-2999.
38. R. Nerimetla, S. Krishnan, S. Mazumder, S. Mohanty, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2017). Species-specificity in myoglobin oxygenation and reduction potential properties. *Meat Mus. Bio.* 1:1-8.
39. [§]B. A. Djimsa, A. Abraham, G. Mafi, D. VanOverbeke, and **R. Ramanathan**[‡]. (2017). Effects of metmyoglobin reducing activity and thermal stability of NADH-dependent reductase and lactate dehydrogenase on premature browning in ground beef. *J. Food Sci.* 82:304-313.
40. M. N. Nair^{1,2}, **R. Ramanathan** G. Rentfrow¹, and S. P. Suman¹. (2017). Intramuscular variations in mitochondrial functionality and sarcoplasmic proteome profile of bovine semimembranosus. *South Afri. J. Anim. Sci.* 47:635-639.
¹ Department of Animal Science, University of Kentucky; ² Visiting scholar in my laboratory.
41. [§]A.R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2016). Effects of extended aging on biochemical properties of dark cutting beef. *J. Anim. Sci.* 94:4040–4048.
42. [§]A.R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2016). Effects of extended aging and modified atmospheric packaging on beef top loin steak color. *J. Anim. Sci.* 94:1727–1737.
43. *N. N. Elroy, J. Rogers¹, G. G. Mafi, D. L. VanOverbeke, S. D. Hartson¹, and **R. Ramanathan**[‡]. (2015). Species-specific effects on non-enzymatic metmyoglobin reduction. *Meat Sci.* 105: 108-113.
¹Department of Biochemistry & Molecular Biology, Oklahoma State University
44. K. Beleski¹, R. A. Mancini¹, C. B. Van Buiten¹, and **R. Ramanathan**. (2015). Effects of reverse electron transport on NADH formation and metmyoglobin reduction. *Meat Sci.* 105:89-92.
¹ Department of Animal Science, University of Connecticut
45. B. M. Harvey, M. Eschbach, E. A. Glynn, S. Kotha, M. Darre, D. J. Adams, **R. Ramanathan**, R. A. Mancini, and K. E. Govoni. (2015). Effect of daily lithium chloride administration on bone quality and strength in growing broiler chickens. *Poultry Sci.* 94:296-301.
46. R. Nerimetla^{1,2}, C. Walgama¹, **R. Ramanathan**, and S. Krishnan¹. (2014). Correlating the electrochemical kinetics of myoglobin-films to pH-dependent meat color. *Electroanaly.* 26:675 – 678.
¹ Department of Chemistry, Oklahoma State University; ² Served in his PhD committee, and the project was collaborative research.
47. **R. Ramanathan**, R. A. Mancini, S. P. Suman, and M. E. Cantino. (2014). Covalent binding of 4-hydroxy-2-nonenal to lactate dehydrogenase decreases NADH formation and metmyoglobin reducing activity. *J. Agri. Food Chem.* 62:2112–2117.
48. R. A. Mancini, and **R. Ramanathan**. (2014). Effects of postmortem storage time on color and mitochondria in beef. *Meat Sci.* 98:65-70.
49. M. N. Nair, S. P. Suman, S. Li, **R. Ramanathan**, and R. A. Mancini. (2014). Temperature- and pH-dependent effect of lactate on in vitro redox stability of red meat myoglobins. *Meat Sci.* 96:408-412.
50. **R. Ramanathan**, R. A. Mancini, P. Joseph, and S. P. Suman. (2013). Bovine mitochondrial oxygen consumption effects on oxymyoglobin in the presence of lactate as a substrate for respiration. *Meat Sci.* 93:893-897.
51. **R. Ramanathan**, R. A. Mancini, G. A. Dady, and C. B. Van Buiten (2013). Effects of succinate and pH on cooked beef color. *Meat Sci.* 93:888-892.

52. **R. Ramanathan**, R. A. Mancini, C. B. Van Buiten, S. P. Suman, and C. M. Beach. (2012). Effects of pyruvate on lipid oxidation and ground beef color. *J. Food Sci.* 77:C886-C892.
53. **R. Ramanathan**, R. A. Mancini, S. P. Suman, and M. E. Cantino. (2012). Effects of 4-hydroxy-2-nonenal on mitochondrial ultrastructure, oxygen consumption, and metmyoglobin reduction. *Meat Sci.* 90:564-571.
54. N. Tatiyaborworntham, C. Faustman, S. Yin, **R. Ramanathan**, R. A. Mancini, S. P. Suman, C. M. Beach, N. B. Maheswarappa, E. W. Grunwald, and M. P. Richards. (2012). Redox instability and hemin loss of mutant sperm whale myoglobins induced by 4-hydroxynonenal in vitro. *J. Agri. Food Chem.* 60:8473-8483.
55. **R. Ramanathan**, R. A. Mancini, and G. Dady. (2011). Effects of pyruvate, succinate, and lactate on beef longissimus color. *Meat Sci.* 88:424-428.
56. **R. Ramanathan**, R. A. Mancini, P. Joseph, S. Yin, N. Tatiyaborworntham, K. H. Petersson, Q. Sun, and M. K. R. Konda. (2011). Effects of lactate on ground lamb color stability and mitochondria-mediated metmyoglobin reduction. *Food Chem.* 126:1616-1671.
57. R. A. Mancini, **R. Ramanathan**, S. P. Suman, G. Dady, and P. Joseph. (2011). Effects of succinate on ground beef color and premature browning. *Meat Sci.* 89:189-194.
58. R. A. Mancini, **R. Ramanathan**, P. Joseph, and K. Petersson. (2011). Effects of sodium ascorbate on lamb vertebrae marrow and longissimus color. *Fleischwirtschaft Inter.* 2:85-87.
59. S. P. Suman, R. A. Mancini, P. Joseph, **R. Ramanathan**, M. K. R. Konda, G. Dady, and S. Yin. (2011). Chitosan inhibits premature browning in ground beef. *Meat Sci.* 88:512-516.
60. S. Yin, C. Faustman, N. Tatiyaborworntham, **R. Ramanathan**, N. B. Maheswarappa, R. A. Mancini, P. Joseph, S. P. Suman, and Q. Sun. (2011). Species-specific myoglobin oxidation. *J. Agri. Food Chem.* 59:12198-12203.
61. S. P. Suman, R. A. Mancini, P. Joseph, **R. Ramanathan**, M. K. R. Konda, G. Dady, and S. Yin. (2010). Packaging-specific influence of chitosan on color stability and lipid oxidation in refrigerated ground beef. *Meat Sci.* 86:994-998.
62. **R. Ramanathan**, R. A. Mancini, and B. M. Naveena. (2010). Effects of lactate on mitochondria-mediated metmyoglobin reduction. *J. Agri. Food Chem.* 58:5724-5729.
63. **R. Ramanathan**, R. A. Mancini, B. M. Naveena, and M. K. R. Konda. (2010). Effect of lactate-enhancement on reflectance and absorbance of beef longissimus steaks. *Meat Sci.* 84:219-226.
64. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2010). Effect of lactate-enhancement on myoglobin oxygenation of beef longissimus steaks overwrapped in PVC and stored at 4 °C. *J. Mus. Food.* 21:669-684.
65. **R. Ramanathan** and R. A. Mancini. (2010). Effects of pyruvate on mitochondria-mediated metmyoglobin reduction. *Meat Sci.* 86:738-741.
66. R. A. Mancini and **R. Ramanathan**. (2010). Out-competing myoglobin for oxygen: The role of mitochondria in terms of oxygen consumption and balance in postmortem muscle. *Fleischwirtschaft Inter.* 2:73-74.
67. R. A. Mancini, S. P. Suman, P. Joseph, **R. Ramanathan**, M. K. R. Konda, B. M. Naveena, and I. Lopez. (2010). Color stabilizing effect of lactate on ground beef is packaging-dependent. *Meat Sci.* 84:329-333.
68. R. A. Mancini, S. P. Suman, M. K. R. Konda, **R. Ramanathan**, P. Joseph, and C. M. Beach. (2010). Mass spectrometric investigations on lactate adduction to myoglobin. *Meat Sci.* 85:363-367.
69. S. P. Suman, R. A. Mancini, **R. Ramanathan**, and M. K. R. Konda. (2010). Modified atmosphere packaging influences premature browning in beef longissimus lumborum steaks. *Fleischwirtschaft Inter.* 3:54-55.

70. B. M. Naveena, C. Faustman, N. Tatiyaborworntham, S. Yin, **R. Ramanathan**, and R. A. Mancini. (2010). Mass spectrometric characterization and redox instability of turkey and chicken myoglobins as induced by unsaturated aldehydes. *J. Agri. Food Chem.* 57:8668-8676.
71. R. A. Mancini, **R. Ramanathan**, S. P. Suman, M. K. R. Konda, P. Joseph, G. A. Dady, B. M. Naveena, and I. López. (2010). Effects of lactate and modified atmospheric packaging on premature browning in ground beef patties. *Meat Sci.* 85:339-346.
72. M. A. R. Amalaradjou, S. A. Baskaran, **R. Ramanathan**, A. K. Johny, A. S. Charles, S. R. Valipe, T. Mattson, D. Schreiber, V. K. Juneja, R. A. Mancini, and K. Venkitanarayanan. (2010). Enhancing the thermal destruction of *Escherichia coli* O157:H7 in ground beef patties by trans-cinnamaldehyde. *Food Micro.* 27:841-844.
73. S. P. Suman, R. A. Mancini, P. Joseph, **R. Ramanathan**, M. K. R. Konda, G. Dady, and S. Yin. (2010). Packaging-specific influence of chitosan on color stability and lipid oxidation in refrigerated ground beef. *Meat Sci.* 86:994-998.
74. B. M. Naveena, C. Faustman, N. Tatiyaborworntham, S. Yin, **R. Ramanathan**, and R. A. Mancini. (2010). Detection of 4-hydroxy-2-nonenal adducts of turkey and chicken myoglobins using mass spectrometry. *Food Chem.* 122:836-840.
75. P. Kuttinarayanan and **R. Ramanathan**. (2010). Effects of low dose irradiation and electrical stimulation on quality parameters of beef longissimus from *Bos indicus* and *Bos Taurus* bulls. *Inter. J. Food Sci. Tech.* 45:1009-1015.
76. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2009). Effects of lactate on beef heart mitochondrial oxygen consumption and muscle darkening. *J. Agri. Food Chem.* 57:1550-1555.
77. **R. Ramanathan**, M. K. R. Konda, R. A. Mancini, and C. Faustman. (2009). Species-specific effects of sarcoplasmic extracts on lipid oxidation in vitro. *J. Food Sci.* 74:C73-C74.
78. R. A. Mancini, S. P. Suman, M. K. R. Konda, and **R. Ramanathan**. (2009). Effect of carbon monoxide packaging and lactate enhancement on the color stability of beef steaks stored at 1 °C for 9 days. *Meat Sci.* 81:71-76.
79. S. P. Suman, R. A. Mancini, **R. Ramanathan**, and M. K. R. Konda. (2009). Effect of lactate-enhancement, modified atmosphere packaging, and muscle source on the internal cooked color of beef steaks. *Meat Sci.* 81:664-670.
80. R. A. Mancini and **R. Ramanathan**. (2008). Sodium lactate influences equine myoglobin redox stability. *Meat Sci.* 78:529-532.

RESEARCH: Technical assistance provided in research and acknowledged in the manuscript

1. A. Purohit, R. K. Singh, W. L. Kerr, and A. Mohan. (2015). Influence of Redox Reactive Iron, Lactate, and Succinate on the Myoglobin Redox Stability and Mitochondrial Respiration, *J. Agric. Food Chem.* 62: 12570–12575.

¹Department of Food Science and Technology, University of Georgia.

Provided technical help to isolate mitochondria and to calculate mitochondrial oxygen consumption.

Popular articles (research and teaching)

§indicates underlined the first author is a graduate/undergraduate student/visiting scientist under Ram's supervision; ‡indicates the corresponding author

1. M.A. Scott[§], M.L. Denzer, G.G. Mafi, and **R. Ramanathan**[‡]. (2020). Understanding metmyoglobin reduction pathways to limit meat discoloration. The National Provisioner. December 11.
2. F. Kiyimba[§], T. S. Belem, M. N. Nair, J. Rogers, S. D. Hartson, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**[‡]. (2020). Hi-Ox MAP and meat color. The National Provisioner. June 12.
3. **R. Ramanathan**[‡] and D. L. VanOverbeke. (2018). Storytelling in teaching. Coffee Conversations. Institute for Teaching & Learning Excellence (ITLE), Oklahoma State University.
4. **R. Ramanathan**[‡], G. G. Mafi, and D. L. VanOverbeke. (2017). Dark cutters: What are they, how do we eliminate them, and how do we use the meat when it occurs?. Meeting place, September 15
5. A.R. English, G.G. Mafi, D.L. VanOverbeke, and **R. Ramanathan**[‡]. (2016). Effects of freeze-thawing on the oxygenation properties of dark cutting beef. Meeting place, February 2.
6. K. M. Wills, A. R. English, M. Neilson, G. G. Mafi, D. L. VanOverbeke, C. Gifford, K. B. Bjugstad, and **R. Ramanathan**[‡]. (2016). Use of RedoxSYS to measure oxidation-reduction potential in beef. The National Provisioner. January 12.

Popular article (gave interview)

1. **R. Ramanathan** and J. Nelson. (2019). Interview on the use of salt in meat products. The National Provisioner.
2. **R. Ramanathan** and J. Nelson. (2018). Interview on the use of phosphate in meat. Meetingplace online magazine.

Teaching: Manuscripts in-preparation (Total = 2)

1. **R. Ramanathan, S. J. Robinson**, and D. L. VanOverbeke. (2022). Use of high and low technology to enhance student responses in Introductory Food Science class. Intended to submit in North American Colleges and Teachers of Agriculture (NACTA) Journal, Intended submission in February.
2. **R. Ramanathan**, J. S. Robinson, G. G. Mafi, D. L. VanOverbeke, and D. R. Stein. (2022). Students' Perceptions Regarding the Use of Technology in an Introductory Food Science Class. Intended to submit in J. Food Sci. Education, Intended submission in February.

RESEARCH: Proceedings and reports

1. **R. Ramanathan**, J. W. Dillwith, A. Abraham, R. M. Mitacek, G. G. Mafi, and D. L. VanOverbeke. (2017). Metabolomics of fresh meat color. Proceedings of the American Meat Science Association Reciprocal Meat Conference, College Station, Texas, June 15-18.
2. S. P. Suman, R. A. Mancini, **R. Ramanathan**, and P. Joseph. (2011). Improving meat color and color stability. In proceedings of 6th Brazilian Congress of Meat Science and Technology, October 24-27, Sao Pedro, Brazil.
3. R. A. Mancini and **R. Ramanathan**. (2010). Effects of metabolites on beef color. National Cattlemen's Beef Association annual report.
4. R. A. Mancini and **R. Ramanathan**. (2009). Potential roles of lactate, pyruvate, succinate, and citrate in beef color. Pre- and post-harvest factors of beef quality. Proceedings of the 62nd American Meat Science Association, Reciprocal Meat Conference, June 21-24, Rogers, Arkansas, USA.

TEACHING: Abstracts presented at national/regional conferences (total = 17)

1. **R. Ramanathan**, G. Mafi, M. R. Crosswhite, J. D. Crosswhite, M. Pfeiffer, D. R. Stein. (2021). Impact of the covid-19 pandemic on instruction in animal and food science courses. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #11.

2. G. Mafi, C. Catrett, M. Scott, H. Nebgen, H. Roper, G. Harris, K. Hearn, A. Carlock, **R. Ramanathan**, and M. Pfeiffer. (2021). Virtual FFA/4-H meat judging workshop for students and instructors delivered via Youtube And Zoom. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #13.
3. A. Pezeshki, M. Habibi, C. Shili, J. Markey, P. Goodarzi, and **R. Ramanathan**. (2020). The effect of study sessions led by teaching assistants on students' academic performance. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, June 2020.
4. **R. Ramanathan**, D. L. VanOverbeke, and D. L. Stein. (2019). Strategies for retention in a food science class. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Idaho, June 2019.
5. C. Edmundson, A. Riggs, A. Beker, **R. Ramanathan**, and D.R. Stein. (2019). Connecting with students through infographics. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Idaho, June 2019.
6. **R. Ramanathan** and D. L. VanOverbeke. (2019). Identify early, retain early: best practices from an introductory food science class. Provost sponsored retention to graduation conference, Oklahoma State University.
7. R. Jadeja and **R. Ramanathan**. (2018). A Novel Teaching Approach to Enhance Students' Understanding of Food Safety Regulations. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Iowa State University, June 2018. Abstract #225.
8. D.L. VanOverbeke, K.R. Hickman, J. Ramsey, D. Stein, **R. Ramanathan**, and P. Weckler. (2018). Facilitating Faculty Development for Classroom Excellence. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Iowa State University, June 2018. Abstract #75.
9. **R. Ramanathan**, B. K. Wilson, D. L. VanOverbeke, and D. L. Stein. (2017). Correlation between attendance and grade in introductory and junior level classes. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Purdue University, June 2017.
10. **R. Ramanathan**, J. S. Robinson, G. G. Mafi, D. L. VanOverbeke, and D. R. Stein. (2016). Students' Perceptions Regarding the Use of Technology in an Introductory Food Science Class. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Hawaii, June 2016.
11. A. Bechtold, L. Hayes, S. Lowman, **R. Ramanathan**, B. Wilson, and D. R. Stein. (2016). Technology Evolution: The Incorporation of ZipGrade into your Technology Toolbox, North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Hawaii, June 2016.
12. R. Jadeja and **R. Ramanathan**. (2015). Oklahoma Food Industry Experiences: A career-themed teaching approach to improve students' success in the area of food safety. Presented at the 2015 Big XII Teaching and Learning Conference, Stillwater, OK.
13. M. M. Neilson, G. G. Mafi, K. Pfeiffer, D. L. VanOverbeke, and **R. Ramanathan**. (2015). Students' perceptions regarding the use of Tophat as an interactive tool in a meat science class. American Meat Science Association, Reciprocal Meat Conference, Lincoln, NE, June 14 to June 17. Abstract #18.
14. **R. Ramanathan** and D. L. VanOverbeke. (2015). Use of high and low technology to enhance student responses in Introductory Food Science class. Innovate, American Society of Animal Science meeting, Braselton, Georgia, May 31-June 2. Abstract #P13.
15. **R. Ramanathan**, A. R. English, G. G. Mafi, D. L. VanOverbeke, and J. S. Robinson. (2015). Students' perceptions regarding the use of Tophat as an interactive tool in food science class. Institute of Food Technologists Annual Meeting, Chicago, IL, July 11 – 15, Abstract #10770.

16. D. R. Stein and **R. Ramanathan**. (2014). Incorporation of the Doceri interactive whiteboard app into the classroom. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Montana State University, Bozeman, June 2014.
17. **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke. (2014). Use of Top Hat as an interactive tool to enhance student learning. 2014 Big XII Teaching and Learning Conference, Oklahoma State University, Stillwater, OK.
18. **R. Ramanathan** and D. R. Stein. (2014). Effectiveness of quiz bowls, jeopardy games, and real-life scenarios as an examination review tool in introductory food science classes and upper-division animal science classes. 2014 Big XII Teaching and Learning Conference, Oklahoma State University, Stillwater, OK.
19. D. R. Stein and **R. Ramanathan**. (2014). The incorporation of the Doceri interactive whiteboard iPad app into the classroom. 2014 Big XII Teaching and Learning Conference, Oklahoma State University, Stillwater, OK.

RESEARCH: Abstracts presented at national/international conferences (total = 126)

§ indicates underlined the first author is a graduate/undergraduate student conducted research under Ramanathan's supervision

1. Sharma, H., Suresh, A., and **Ramanathan, R.** (2021). Metabolite profile differences between cow and goat milk yogurts. Presented at the Mid-West American Chemical Society Spring Meeting, Agricultural and Food Chemistry Division, paper id #3550243, April 5, 2021.
2. **Ramanathan, R.**, Aakur, S., Suresh, A., Kiyimba, F., and Mafi, G. (2021). Comparison of machine learning algorithms to identify metabolomics features for predictive modeling of beef color. Presented at the 67th International Congress of Meat Science and Technology, Kraków, Poland, Virtual oral presentation Animal Tissue Biology session, id # 93229216667, August 2021.
3. Kiyimba, F[§], Hartson, S. D., Rogers, J., Mafi, G. G., and **Ramanathan, R.** (2021). Effects of wet aging on differential protein abundance in dark-cutting and normal-pH beef longissimus lumborum muscles. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #138.
4. Kiyimba, F[§], Hartson, S. D, Mafi, G., and **Ramanathan, R.** (2021). In silico bioinformatics analyses reveals the structural and functional characterization of protein G3N0V0 differentially abundant in dark-cutting beef. Presented at the 67th International Congress of Meat Science and Technology, Kraków, Poland, Virtual oral presentation Animal Tissue Biology session, August 2021.
5. Kiyimba, F[§], S. P. Suman, P. Joseph, A. Abraham, Mafi, G., and **Ramanathan, R.** (2021). Bioinformatics approach integrating metabolomics and proteomics to characterize the muscle-specific differences in color stability of beef Longissimus lumborum and Psoas major. Presented at the 67th International Congress of Meat Science and Technology, Kraków, Poland, Virtual oral presentation Animal Tissue Biology session, August 2021.
6. C. Shili, M. Habibi, P. Goodarzi, F. Kiyimba, S.D. Hartson, J. N. Broomhead, **R. Ramanathan**, and A. Pezeshki, 2021: Corn-expressed phytase modulates serum amino acids, and proteomics profiles in Nursery pigs fed with low-protein, -calcium and -phosphorous diets. June 2021 American Society of Animal Science Annual Meeting and Trade show, Louisville, Kentucky, USA
7. F. Kiyimba[§], S. D. Hartson, J. Rogers G. G. Mafi, and **R. Ramanathan**. (2021). Changes in metabolites and protein expression profiles of atypical dark-cutting and normal-pH beef. June 2021 Southern Section American Society of Animal Science Annual Meeting and Trade show, Louisville, Kentucky, USA.
8. M. Denzer[§], G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2021). Dark storage of enhanced dark-cutting beef in nitrite-embedded packaging increased metmyoglobin formation upon repackaging.

June 2021 Southern Section American Society of Animal Science Annual Meeting and Trade show, Louisville, Kentucky, USA.

9. T. Price[§], J. Warren, G. Mafi, A. Ramachandran, and **R. Ramanathan**. (2021). Evaluating the effects of storage condition on greenhouse gas formation from ground meat. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #15.
10. **R. Ramanathan**, L. H. Lambert, M. N. Nair, B. Morgan, G. Mafi, and M. Pfeiffer. (2021). Economic losses due to beef discoloration. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #16.
11. K. Hearn, M. Pfeiffer, B. Wilson, **R. Ramanathan**, G. G. Mafi. (2021). Effects of differing carbon dioxide levels on meat color in modified atmosphere packaging. Economic losses due to beef discoloration. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #56.
12. A. Carlock, M. Denzer, M. Pfeiffer, G. G. Mafi, and **R. Ramanathan**. (2021). Evaluating the effects of standardization methods on nix pro and hunterlab readings. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #74.
13. C. Reesman[§], M. Denzer, M. Pfeiffer, G. Mafi, and **R. Ramanathan**. (2021). Comparison of longissimus lumborum and psoas major metmyoglobin reducing ability and oxygen consumption quantification approaches. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #79.
14. D. Piao, M. L. Denzer, G. G. Mafi, and **R. Ramanathan**. (2021). Modified algorithms to quantify sub-surface myoglobin forms using near-infrared diffuse reflectance spectroscopy. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #81.
15. N. Hawkins[§], M. L. Denzer, G. G. Mafi, M. Pfeiffer, M. C. Hunt, R. Mancini, and **R. Ramanathan**. (2021). Comparison of myoglobin quantification methods. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #82.
16. M. Denzery, D. Piao, M. Pfeiffer, G. G. Mafi, and **R. Ramanathan**. (2021). Novel near-infrared based needle probe to assess interior meat color. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #90.
17. M. Lawson[§], M. L. Denzer, F. Kiyimba, G. G. Mafi, and **R. Ramanathan**. (2021). Effect of rotenone on ground beef color. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #129.
18. M. Scott[§], M. L. Denzer, G. G. Mafi, M. Pfeiffer, and **R. Ramanathan**. (2021). Effects of oxygen on non-enzymatic metmyoglobin reduction in-vitro. Presented at the American Meat Science Association Reciprocal Meat Conference, Reno, NV, Aug 16-18, Abstract #133.
19. A. M. Cassens, K. Hearn, **R. Ramanathan**, and G. G. Mafi. (2020). Consumer perception, willingness to pay, tenderness and retail display of non-enhanced, enhanced and high-quality pork loins. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
20. T. Price[§], J. Warren, G. Mafi, and **R. Ramanathan**. (2020). Comparison of methane gas emissions from fresh and cooked chicken, pork, beef, and turkey. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
21. L. Yoder, D. VanOverbeke, **R. Ramanathan**, and G. G. Mafi. (2020). Effects of rosemary and green tea antioxidants on ground beef patties in traditional and modified atmosphere packaging. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.

22. M. Denzer[§], D. VanOverbeke, G. Mafi, and R. Ramanathan. (2020). Evaluation of glucono delta-lactone enhancement and nitrite-embedding packaging on surface and cooked colour of dark-cutting beef. Presented at the Institute of Food Technologists Annual Meeting, virtual, June.
23. M. Denzer[§], D. VanOverbeke, G. Mafi, and **R. Ramanathan**. (2020). Impact of nitrite-embedded packaging and enhancement on dark-cutting raw and cooked beef color. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
24. M. Lawson[§], M. Denzer, G. Mafi, and **R. Ramanathan**. (2020). Novel probe-type oxygen sensor to measure oxygen consumption in beef steaks. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
25. F. Kiyimba[§], S. Hartson, J. Rogers, D. VanOverbeke, G. Mafi, and **R. Ramanathan**. (2020). Global changes in ribosomal protein expression regulates mitochondrial protein mass and function in dark-cutting beef. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
26. M. Scott[§], M. Denzer, G. Mafi, and **R. Ramanathan**. (2020). Effects of light on non-enzymatic metmyoglobin reduction in-vitro. Presented at the International Congress on Meat Science and Technology, virtual, Aug 2020.
27. **R. Ramanathan**, A. M. Cassens, D. L. VanOverbeke, and G. G. Mafi. (2020). Metmyoglobin reducing activity and oxygen consumption properties of atypical dark-cutting beef. Presented at the Southern Section American Society of Animal Science Meats Session, Chattanooga, Tennessee, Jan 2020.
28. A. M. Cassens, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2020). Tenderness and retail display evaluation of non-enhanced, enhanced and high-quality pork chops. Presented at the Southern Section American Society of Animal Science Meats Session, Chattanooga, Tennessee, Jan 2020.
29. R. K. Briggs, J. F. Legako, P. R. Broadway, J. A. Carroll, N. C. Burdick Sanchez, Z. K. Smith, **R. Ramanathan**, and K. J. Thornton. (2020). Effects of pre-mortem stress on protein expression, steak color, and myofibrillar fragmentation index in the longissimus lumborum following harvest. Presented at the American Society of Animal Science Annual Meeting, virtual, July.
30. Q. Yang, B. Chen, K. Robinson, T. Belem, **R. Ramanathan**, and G. Zhang. (2019). Butyrate and forskolin act synergistically in protecting chickens from necrotic enteritis. Poultry Science Association Annual Meeting, July 15-18, 2019, Montréal, Québec, Canada.
31. C. Edmundson[§], A. Cassens, G. Mafi, D. Stein, A. Riggs, D. VanOverbeke, and **R. Ramanathan**. (2019). Consumer perception towards the enhanced color of atypical dark-cutting beef by nitrite-embedded packaging. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #3.
32. M. Perry, M. Pfeiffer, D. VanOverbeke, **R. Ramanathan**, and G. Mafi. (2019). Effects of finishing diet and packaging on longissimus dorsi color. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #35.
33. L. Yoder, A. Cassens, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Modified atmospheric packaging and antioxidant enhancement improve redness of atypical dark-cutting beef. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #44.
34. T. S. Belem[§], B. Chaudhary, S. Mohanty, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Effect of temperature on oxymyoglobin and metmyoglobin denaturation properties. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #50.

35. A. Cassens, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). The effect of modified atmospheric packaging on beef color sensory characteristics of different muscle pH categories. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #105.
36. S. Mazunder[§], S. Suman, S. Mohanty, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Myoglobin modeling to study species-specific differences in the distance between heme iron and proximal and distal histidines. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #144.
37. F. Kiyimba[§], S. Hartson, J. Rogers, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Differential protein abundance in dark-cutting and normal-pH beef. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #149.
38. M. Denzer[§], H. Comstock, C. Mowery, N. Maheswarappa, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Characterization of the cofactors involved in non-enzymatic metmyoglobin reduction in-vitro. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #150.
39. T. Price[§], M. Denzer, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2019). Comparison of oxidizing solutions in the evaluation of metmyoglobin reducing activity in dark-cutting beef. Presented at the American Meat Science Association, Reciprocal Meat Conference, Fort Collins, CO, June 23-26. Abstract #170.
40. E. Bechtold[§], S. Suman, S. Mohanty, S. Mazumder, S. Krishnan, R. Nerimetla, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2019). Species-specificity in metmyoglobin reduction. Presented at the Southern Section American Society of Animal Science Meats Session, Oklahoma City, Oklahoma, Jan 2019. Abstract #81.
41. A. M. Cassens[§], G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2019). Improving lean muscle color of atypical dark-cutting beef by antioxidant-enhancement and modified atmospheric packaging. Presented at the Southern Section American Society of Animal Science Meats Session, Oklahoma City, Oklahoma, Jan 2019. Abstract #77.
42. **R. Ramanathan**, A. English, G. G. Mafi, and D. L. VanOverbeke. (2019). Effects of extended aging, modified atmospheric packaging, and display time on metmyoglobin reducing activity and oxygen consumption of high-pH beef. Presented at the Southern Section American Society of Animal Science Meats Session, Oklahoma City, Oklahoma, Jan 2019. Abstract #78.
43. R. Feuz, B. Norwood, and **R. Ramanathan**. (2019). Do consumers have an appetite for discolored beef, 2019 Southern Agricultural Economics Association, Annual Meetings, Birmingham, Alabama, #162.
44. R. Feuz, B. Norwood, and **R. Ramanathan**. (2019). The effect of marketing discolored beef on consumer preferences for non-discolored beef, 2019 Western Agricultural Economics Association Annual Meeting, Coeur d'Alene, Idaho #35.
45. C. McDaniel, S. Billups., **R. Ramanathan**, D. Jaroni, and R. Jadeja (2019). A novel antimicrobial approach to improve microbial safety of beef. Presented at the International Association for Food Protection Annual Meeting, Louisville, KY, July.
46. J. Saha, R. Jadeja, **R. Ramanathan**, P. Weerarathne and D. Jaroni. (2019). Evaluating the efficacy of trim interventions against high and low levels of Escherichia coli O157:H7 and their impact on ground beef color. Presented at the International Association for Food Protection Annual Meeting, Louisville, KY, July.
47. A. Bechtold[§], G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2018). Comparison of myoglobin, hemoglobin, and cytochrome c oxidation properties. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.

48. T. M. Neilson[§], M. M. Pfeiffer, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2018). Pomegranate rind extract limits ground beef color discoloration and lipid oxidation. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.
49. A. Cassens[§], K. Wills, M. M. Pfeiffer, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2018). Effects of antioxidant/beef flavor-enhancement and modified atmosphere packaging of dark-cutting beef on retail display, flavor, and tenderness. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.
50. M. M. Pfeiffer, G. G. Mafi, T. M. Neilson, **R. Ramanathan**, and D. L. VanOverbeke. (2018). Frequencies and severity of injection-site lesions in muscles from rounds of cow carcasses. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.
51. F. Kiyimba[§], M. N. Nair, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2018). Effect of high oxygen partial pressure on 4-hydroxy-2-nonenal induced myoglobin oxidation, oxidation-reduction potential, and myoglobin unfolding. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.
52. R. M. Mitacek[§], R. Jadeja, D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan**. (2018). The effects of postmortem aging on beef color stability and biochemical properties. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 19-22.
53. P. Wilson[§], C. Mowery, and **R. Ramanathan**. (2018). Binding of 4-hydroxy-2-nonenal decrease non-enzymatic methemoglobin reducing capacity. Experimental Biology Conference, San Diego, Programming Society: American Society for Biochemistry and Molecular Biology, April 22-26. Abstract # 8466.
54. C. Mowery[§], **R. Ramanathan**, and A. K. Johny. (2018). *Punica granatum* extract promotes mitochondrial function and attenuates paraquat toxicity. Experimental Biology Conference, San Diego, Programming Society: American Society for Biochemistry and Molecular Biology, April 22-26. Abstract # 8378.
55. M.M. Pfeiffer, D.L. VanOverbeke, R.M. Mitacek, G.G. Mafi, and **R. Ramanathan**. (2017). Effects of temperature abuse on shelf life and color stability on beef products. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, College Station, Texas, June 15-18. Abstract #38.
56. [§]K. M. Wills, R. M. Mitacek, G. G. Mafi, D. L. VanOverbeke, D. Jaroni, and **R. Ramanathan**. (2017). Effects of aging, antioxidant-enhancement, and modified atmospheric packaging on the appearance of dark-cutting beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, College Station, Texas, June 15-18. Abstract #139.
57. [§]R. M. Mitacek, A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2017). Effects of modified atmosphere packaging on surface color of dark-cutting beef. Presented at the Institute of Food Technologists Annual Meeting, Las Vegas, Nevada, June 25-28.
58. [§]K. Peckham, R. M. Mitacek, D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan**. (2017). The effect of aging time on metmyoglobin reducing activity. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, College Station, Texas, June 15-18. Abstract #156.
59. [§]K. R. Brennecke, R. M. Mitacek, R. A. Mancini, K. Bailey, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2017). Effects of lactate-enhancement on beef muscle structure. Presented at the Institute of Food Technologists Annual Meeting, Las Vegas, Nevada, June 25-28.
60. [§]K. M. Wills, H. J. Nelson, S. Bhargava, A. Abraham, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2016). Effects of pomegranate rind extract on ground beef color. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2016, San Angelo, Texas. Abstract #136.

61. §Y. Ke, A. Abraham, G. G. Mafi, D. Vanoverbeke, and **R. Ramanathan**. (2016). Effects of display time on mitochondrial and cytochrome c content in beef longissimus and psoas muscles. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2016, San Angelo, Texas. Abstract #147.
62. §A. Abraham, J. W. Dillwith, D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan**. (2016). Analyzing beef color stability differences with metabolomics. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2016, San Angelo, Texas. Abstract #150.
63. §R. M. Mitacek, K. Brennecke, D. VanOverbeke, G. Mafi, J. Poulson, and **R. Ramanathan**. (2016). Effects of packaging, antioxidants, and NADH on ground beef color and oxidation-reduction potential. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2016, San Angelo, Texas. Abstract #157.
64. §B. A. Djimsa, A. Abraham, G. Mafi, D. VanOverbeke, and R. Ramanathan. (2016). Effects of packaging and temperature on metmyoglobin reducing activity of cooked ground beef patties. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2016, San Angelo, Texas. Abstract #151.
65. §B. A. Djimsa, A. Abraham, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2016). Characterizing the thermal stability of myoglobin, NADH-dependent reductase, and lactate dehydrogenase. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 15-19, Abstract #072.
66. M. N. Nair, S. Suman, G. Rentfrow, and **R. Ramanathan**. (2016). Intramuscular Difference in Color and Mitochondrial Functionality of Postmortem Beef Semimembranosus. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 15-19, Abstract #079.
67. X. Chen, **R. Ramanathan** and K. Bhargava. (2016). Fortification of yogurt with chickpea flour decreases fermentation time and enhances overall quality of yogurt. Presented at the Experimental Biology, abstract published in The FASEB, 30, Supplement 893.7.
68. V. Kuttappan, **R. Ramanathan**, J. Escobar, S. Hartson, C. Owens, C. Coon, B. W. Kong, M. Vazquez-Añon, W. Bottje, and B. Hargis. (2016). Proteomic analysis on broiler breast myopathies. Presented at the International Poultry Scientific Forum Georgia World Congress Center, Atlanta, Georgia, January 25-26. Abstract #M18. Abstract published in Poultry Sci. 95(E-Suppl. 1), 200.
69. §B. A. Djimsa, A. R. English, G. G. Mafi, D. L. Vanoverbeke, and **R. Ramanathan**. (2015). Effect of temperature on fluorescent properties of oxymyoglobin. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #135.
70. M. M. Neilson, D. L. VanOverbeke, S. Depue, J. Lusk, B. Norwood, **R. Ramanathan**, S. Howard, and G. G. Mafi. (2015). Consumer preference of ground beef patties with varying percentages of finely textured beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #3.
71. §K. M. Wills, A. R. English, G. G. Mafi, D. L. VanOverbeke, C. Gifford, K. B. Bjugstad, and **R. Ramanathan**. (2015). Use of RedoxSYS to measure oxidation-reduction potential in beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #153.
72. §B. A. Djimsa, A. R. English, G. G. Mafi, D. L. VanOverbeke, K. L. Bailey, and **R. Ramanathan**. (2015). Reflectance and absorbance properties of dark cutting beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #146.
73. §A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2015). Effects of freeze-thawing on the oxygenation properties of dark cutting beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #139.

74. [§]A. R. English, B. N. Harsh, K. M. Wills, X. Guo, G. G. Mafi, D. L. VanOverbeke, U. DeSilva, and **R. Ramanathan**. (2015). Effects of extending aging on biochemical properties of dark cutting beef. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #141.
75. [§]A. Abraham, K. B. Bjugstad, G. G. Mafi, D. L. VanOverbeke, C. Gifford, L. T. Rael, R. Bar-Or, and **R. Ramanathan**. (2015). Correlating myoglobin and lipid oxidation with oxidation-reduction potential in a sarcoplasm-liposome system. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #144.
76. K. Pfeiffer, G. G. Mafi, **R. Ramanathan**, J. Neel, and D. L. VanOverbeke. (2015). Tenderness of pasture versus grain fed beef aged 14 and 28 days. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #88.
77. **R. Ramanathan**, R. Madden, D. L. VanOverbeke, G. G. Mafi, and J. W. Dillwith. (2015). Metabolite profile differences between beef longissimus and psoas muscles. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 11-15, Abstract #10769.
78. **R. Ramanathan**, N. N. Elroy, A. R. English, and A. Kollanoor-Johny. (2015). Effects of Lactococcus lactis cell-free supernatant on ground beef quality. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 11-15, Abstract #10438.
79. [§]A.R. English, K. F. Satee, N. N. Elroy, K. M. Wills, B. N. Harsh, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2015). Effects of extended aging and carbon monoxide packaging on beef longissimus color. Presented at the Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 11-15, Abstract #065-01.
80. R. A. Mancini, S. P. Suman, M. N. Nair, K. Belskie, S. Li, C. M. Beach, and **R. Ramanathan**. (2015). Differential abundance of mitochondrial proteome in beef muscles. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Lincoln, Nebraska, June 14-17. Abstract #137.
81. [§]N. N. Elroy, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2014). Species-specific effects on non-enzymatic metmyoglobin reduction. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #122.
82. [§]A.R. English, B. Harsh, K. M. Price, G. G. Mafi, D. L. VanOverbeke, P. Joseph, and **R. Ramanathan**. (2014). Effects of water- and oil-based rosemary on ground beef metmyoglobin reducing activity. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #13.
83. [§]A.R. English, G. G. Mafi, D. L. VanOverbeke, S. P. Suman, and **R. Ramanathan**. (2014). Fluorescent properties of beef myoglobin during heat-induced denaturation. Presented at the Institute of Food Technologists Annual Meeting, New Orleans, Louisiana, Abstract #065-01
84. **R. Ramanathan**, X. Guo, G. G. Mafi, D. L. VanOverbeke, and U. DeSilva. (2014). Quantification of beef longissimus and psoas muscle mitochondria using real-time polymerase chain reaction. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #124.
85. **R. Ramanathan**, R. Madden, G. G. Mafi, D. L. VanOverbeke, and J. W. Dillwith. (2014). Comparison of extraction procedures to characterize beef longissimus metabolomic profile. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #125.
86. K. M. Belskie, **R. Ramanathan**, S. P. Suman, and R. A. Mancini. (2014). Effect of muscle type and display time on beef mitochondria. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #117.

87. S. Krishnan, R. Nerimetla, C. Walgama, and **R. Ramanathan**. (2014). Understanding the meat color attributes by electrochemistry of myoglobin films on electrodes. Presented at the Electrochemical Society and The Society of Mexican Electrochemistry Joint International Meeting, October 5-10, Cancun, Mexico. Abstract #1348.
88. R. Nerimetla, C. Walgama, **R. Ramanathan**, and S. Krishnan. (2014). Electrochemistry of pH-Dependent Meat Color. Presented at the 247th American Chemical Society National Meeting and Exposition, March 16-20, Dallas, Texas.
89. M. N. Nair, S. P. Suman, **R. Ramanathan**; M. K. Chatli, S. Li, P. Joseph, C. M. Beach, and G. Rentfrow. (2014). Intramuscular variations in mitochondrial functionality of bovine semimembranosus. Presented at the World Muscle Society, Berlin, October 7-11, Germany, Abstract #G.P.194.
90. K. McCullough, D. L. VanOverbeke, **R. Ramanathan**, and G. G. Mafi. (2014). Effect of bone in vs. Boneless aging on eating quality of middle meats. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #52.
91. K. McCullough, D. L. VanOverbeke, **R. Ramanathan**, and G. G. Mafi. (2014). Effects of aging middle meats as steaks vs. Intact whole muscles on eating quality. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #51.
92. K. J. Winn, G. G. Mafi, B. Bloomberg, D. L. VanOverbeke, **R. Ramanathan**, J. Staude, and S. Carter. (2014). Impact of Paylean supplementation on production, carcass, and meat quality characteristics of Yorkshire and Danbred swine. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #84.
93. B. N. Harsh, G. G. Mafi, D. L. VanOverbeke, **R. Ramanathan**, J. M. Hodgen, J. L. Finck. , C. L. Maxwell, C. J. Richards, and C. R. Krehbiel. (2014). Effects of Technology Use In Beef Production Systems on Meat Quality and Consumer Palatability Ratings. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, Wisconsin, June 15-18. Abstract #39.
94. B. N. Harsh, G. G. Mafi, D. L. VanOverbeke, **R. Ramanathan**, J. M. Hodgen, J. L. Finck. , C. L. Maxwell, C. J. Richards, and C. R. Krehbiel. (2014). Effect of Technology Use in Beef Production Systems on Muscle Conformation of Longissimus Lumborum. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Madison, WI, June 15-18. Abstract #76.
95. **R. Ramanathan**, R. Nerimetla, S. Krishnan, D. L. VanOverbeke, and G. G. Mafi. (2013). Investigating the usefulness of cyclic voltammetry to determine myoglobin reduction potential and oxygenation. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Auburn, Alabama, June 16-19. Meat Science, 96, 494.
96. R. Nerimetla, S. Krishnan, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2013). Effects of oxygen on beef myoglobin reduction potential in vitro. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Auburn, Alabama, June 16-19. Meat Science, 96, 494-495.
97. **R. Ramanathan**, R. A. Mancini, and C. B. Van Buiten. (2013). Effects of aging temperature and time on beef longissimus color intensity and stability. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Auburn, Alabama, June 16-19. Meat Science, 96, 491.
98. **R. Ramanathan**, R. A. Mancini, M. N. Nair, S. P. Suman, and C. M. Beach. (2013). Mass spectrometric characterization of 4-hydroxy-2-nonenal binding to bovine lactate dehydrogenase. Presented at the Institute of Food Technologist Annual Meeting, Chicago, Illinois, Abstract #073-07.
99. M. N. Nair, S. P. Suman, **R. Ramanathan**, and R. A. Mancini. (2013). Redox and thermal stabilities of livestock myoglobins in the presence of lactate. Presented at the Institute of Food Technologist Annual Meeting, Chicago, Illinois, Abstract #073-03.

100. S. P. Suman, P. Joseph, C. M. Beach, R. A. Mancini, and **R. Ramanathan**. (2012). Lipid oxidation: carboxymyoglobin interactions in muscle food systems. Presented at the American Oil Chemists' Society Annual Meeting, May, Long Beach, California, USA.
 101. **R. Ramanathan**, R. A. Mancini, M. N. Nair, S. P. Suman, and C. M. Beach. (2012). Mass spectrometric characterization of 4-hydroxy-2-nonenal binding to bovine lactate dehydrogenase. Presented at the Institute of Food Technologists annual meeting, June, Las Vegas, Nevada, USA.
 102. **R. Ramanathan**, R. A. Mancini, C. B. Van Buiten, M. N. Nair, and S. P. Suman. (2012). Effects of aging temperature and extended aging on bovine mitochondrial function. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, Manhattan, Kansas, June 16-19, Meat Science, 93, 2013, 1-36.
 103. **R. Ramanathan**, R. A. Mancini, and S. P. Suman. (2011). Effects of 4-hydroxy-2-nonenal on lactate dehydrogenase mediated metmyoglobin reducing activity. Presented at the Institute of Food Technologists annual meeting, June, New Orleans, Louisiana, USA.
 104. **R. Ramanathan**, R. A. Mancini, S. P. Suman, and M. E. Cantino. (2011). Effects of 4-hydroxy-2-nonenal on structure and function of beef mitochondria. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June, Manhattan, Kansas, USA.
 105. R. A. Mancini and **R. Ramanathan**. (2011). Effects of pyruvate on beef myoglobin. Presented at the Institute of Food Technologists annual meeting, June, New Orleans, Louisiana, USA.
 106. **R. Ramanathan**, R. A. Mancini, S. P. Suman, P. Joseph, S. Yin, G. A. Dady, and M. K. R. Konda. (2010). Effects of succinate and modified atmospheric packaging on premature browning in cooked ground beef patties. Presented at the Institute of Food Technologists annual meeting, July, Chicago, Illinois, USA. Abstract #235-10.
 107. **R. Ramanathan**, R. A. Mancini, M. E. Cantino, and B. M. Naveena. (2010). Effects of 4-hydroxy-2-nonenal on mitochondria-mediated metmyoglobin reduction. Presented at the Institute of Food Technologists annual meeting, July, Chicago, Illinois, USA.
 108. **R. Ramanathan**, R. A. Mancini, and B. M. Naveena (2010). The role of lactate on mitochondria-mediated metmyoglobin reduction. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June, Lubbock, Texas, USA.
- **Awarded 2nd place at the Reciprocal Meat Conference graduate student Ph.D. Division poster competition.
109. R. A. Mancini and **R. Ramanathan**. (2010). Effect of pyruvate on mitochondria-mediated metmyoglobin reduction. Presented at the Institute of Food Technologists annual meeting, July, Chicago, USA. Abstract #192-02.
 110. N. Tatiyaborworntham, C. Faustman, S. Yin, **R. Ramanathan**, R. A. Mancini, B. M. Naveena, M. P. Richards, and E. W. Grunwald. (2010). Redox instability of mutant sperm whale myoglobins induced by 4-hydroxy-nonenal. Presented at the Institute of Food Technologists annual meeting, July, Chicago, USA.
 111. S. P. Suman, R. A. Mancini, P. Joseph, **R. Ramanathan**, M. K. R. Konda, G. Dady, and S. Yin. (2010). Packaging-specific influence of chitosan on surface redness of refrigerated ground beef patties. In Proceedings of 56th International Congress of Meat Science and Technology, August 2010, Jeju, South Korea. Abstract #E010.
 112. S. Yin, C. Faustman, N. Tatiyaborworntham, **R. Ramanathan**, B. M. Naveena, R. A. Mancini, P. Joseph, S. P. Suman, and Q. Sun. (2010). Investigation of species-specific myoglobin oxidation. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June, Lubbock, Texas, USA. Abstract #119P.

113. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2009). Effects of lactate on beef heart mitochondrial oxygen consumption and muscle darkening. Presented at the College of Agriculture and Natural Resources Research Forum, University of Connecticut, March, Storrs, Connecticut, USA.
- **Awarded 2nd place at the College of Agriculture and Natural Resources graduate student Research Forum oral presentation competition.
114. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2009). Effects of lactate on beef mitochondrial oxygen consumption and muscle darkening. Presented at the Institute of Food Technologists annual meeting, June, Anaheim, California, USA.
- **Awarded 1st place at the Muscle Foods Division graduate student poster competition.
115. S.P. Suman, R.A Mancini, **R. Ramanathan**, and M.R. K. Konda. (2009). Premature browning in color-stable beef muscle. In Proceedings of 55th International Congress of Meat Science and Technology, August 2009, Copenhagen, Denmark. Abstract #121.
116. S. P. Suman, R. A. Mancini, M. R. K. Konda, **R. Ramanathan**, and P. Joseph. (2009). Effects of packaging and lactate on ground beef cooked color. In Proceedings of 55th International Congress of Meat Science and Technology, August 2009, Copenhagen, Denmark. Abstract #137.
117. S. P. Suman, R. A. Mancini, M. R. K. Konda, and **R. Ramanathan**. (2009). Differential susceptibility of color stable and color-labile beef muscles to premature browning. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2009, Rogers, Arkansas. Abstract #21.
118. S. P. Suman, R. A. Mancini, M. R. K. Konda, **R. Ramanathan**, and G. Dady. (2009). Lactate modulated improvement of color stability in ground beef is packaging-specific. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2009, Rogers, Arkansas. Abstract #19.
119. R. A. Mancini, S. P. Suman, M. R. K. Konda, **R. Ramanathan**, P. Joseph, and C.M. Beach. (2009). Characterization of lactate-myoglobin interactions using mass spectrometry. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June 2009, Rogers, Arkansas. Abstract #18.
120. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2008). Role of lactate and pyruvate in myoglobin redox stability and mitochondrial oxygen consumption rate. Presented at the Institute of Food Technologists' annual meeting, June, New Orleans, Louisiana, USA.
121. **R. Ramanathan**, R. A. Mancini, and M. K. R. Konda. (2008). Effect of lactate on beef pigment oxygenation. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June, Gainesville, Florida, USA.
122. R. A. Mancini, S. P. Suman, M. K. R. Konda, and **R. Ramanathan**. (2008). Effect of modified atmosphere packaging and potassium lactate injection-enhancement on beef psoas major steak color stability. International Congress of Meat Science and Technology, Cape Town, South Africa. Abstract # 3A.8.
123. M. K. R. Konda, **R. Ramanathan**, and R. A. Mancini. (2008). Effects of lactate and carboxymyoglobin on lipid oxidation in phosphatidylcholine liposome model system. Presented at the American Meat Science Association Annual Reciprocal Meat Conference, June, Gainesville, Florida, USA.
124. S. P. Suman, R. A. Mancini, M. K. R. Konda, and **R. Ramanathan**. (2008). Influence of modified atmosphere packaging system on internal cooked color of beef longissimus lumborum steaks. Presented at the Institute of Food Technologists' annual meeting, June, New Orleans, Louisiana, USA. Abstract #134-24.
125. R. A. Mancini, S. P. Suman, M. K. R. Konda, and **R. Ramanathan** (2008). Effect of modified atmosphere packaging and potassium lactate injection-enhancement on the color stability and darkening of beef steaks. Presented at the Reciprocal Meat Conference, June, Gainesville, Florida, USA. Abstract # 22.

126. **R. Ramanathan** and R. A. Mancini. (2007). Sodium lactate influences equine myoglobin redox stability. Presented at the American Meat Science Association Annual Reciprocal Meat Science Conference, June, Brookings, South Dakota, USA.

**Awarded 2nd place at the Reciprocal Meat Conference graduate student MS Division poster competition.

Abstract/poster presented at Oklahoma State University level meetings/symposiums (total = 18)

§ indicates the first author is a graduate/undergraduate student under Ramanathan's supervision

1. Sutton, J., M. Habibi, C. Shili, A. Beker, J. Burch-Konda, M. Denzer, K. Hearn, **R. Ramanathan**, and A. Pezeshki. 2020. Gut and skeletal muscle regulate the feed intake and thermogenesis of broilers during experimentally induced heat stress. The Biochemistry and Molecular Biology Graduate Student Association's (BMBGSA) 17th Annual Biological Sciences Research Symposium, Department of Biochemistry and Molecular Biology, Oklahoma State University, Stillwater, Oklahoma. Oral Presentation.

2. E. Bechtold§, S. Suman, S. Mohanty, S. Mazumder, S. Krishnan, R. Nerimetla, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2019). Species-specificity in metmyoglobin reduction. Presented at Robert Kerr Food and Agricultural Products Center- Oklahoma State University Research Symposium, February 2019, Oklahoma State University, September.

***Awarded 1st place at the Food Science Undergraduate Student Poster Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium.*

3. F. Kiyimba§, S. Hartson, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2019). Differential protein expression of normal and dark-cutting beef. Presented at Robert Kerr Food and Agricultural Products Center- Oklahoma State University Research Symposium, February 2019, Oklahoma State University, September.

***Awarded 2nd place at the Food Science Graduate Student Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium.*

4. T. Belem, B. Chaudhary, S. Mohanty, G. G. Mafi, D. L. Vanoverbeke, R. Ramanathan. (2019). Effect of temperature and pH on oxy- and metmyoglobin denaturation properties. Presented at Robert Kerr Food and Agricultural Products Center- Oklahoma State University Research Symposium, February 2019.

***Awarded 3rd place at the Food Science Graduate Student Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium.*

5. F. Kiyimba§, M. N. Nair, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2018). Effect of high oxygen partial pressure on 4-hydroxy-2-nonenal induced myoglobin oxidation, oxidation-reduction potential, and myoglobin unfolding. Presented at the 15th Annual Biochemistry and Molecular Biology Research Symposium, Oklahoma State University, September.

6. *§H. Comstock, R. M. Mitacek, D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan**. (2017). Factors affecting non-enzymatic metmyoglobin reduction. Presented at the 14th Annual Biochemistry and Molecular Biology Research Symposium, Oklahoma State University, September 17-18.

7. *§K. Peckham, R. M. Mitacek, D. L. VanOverbeke, G. G. Mafi, and **R. Ramanathan**. (2017). The effect of aging time on metmyoglobin reducing activity. Presented at the 14th Annual Biochemistry and Molecular Biology Research Symposium, Oklahoma State University, September 17-18.

8. *§K. M. Wills, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2016). Aging and enhancement on dark-cutting beef color. Whiteman Graduate Student Paper presentation. February 19, Oklahoma State University.

***Awarded 1st place at the Department of Animal Science, Dr. Joe V. Whiteman Award for Excellence in Oral Presentation of Scientific Information by Graduate Students.*

9. *[§]K. M. Wills, H. J. Nelson, S. Bhargava, A. Abraham, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2016). Effects of pomegranate rind extract on ground beef color. Food Science Graduate Students Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium, February 17, 2016.
***Awarded 1st place at the Food Science Graduate Student Poster presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium.*
10. *[§]B. A. Djimsa, A. Abraham, G. Mafi, D. VanOverbeke, and **R. Ramanathan**. (2016). Effects of packaging and temperature on metmyoglobin reducing activity of cooked ground beef patties. Whiteman Graduate Student Paper presentation. February 19, Oklahoma State University.
***Awarded 3rd place at the Department of Animal Science, Dr. Joe V. Whiteman Award for Excellence in Oral Presentation of Scientific Information by Graduate Students.*
11. [§]S. C. Spring, A. Abraham, B. A. Djimsa, and **R. Ramanathan**. (2015). Effects of temperature on the NADH-dependent reductase activity. Wentz Research Scholar presentation, April 24, Edmon Low Library, Oklahoma State University.
12. [§]A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2015). Effects of extended aging and modified atmospheric packaging on beef longissimus color. Whiteman Graduate Student Paper presentation. February 19, Oklahoma State University.
***Awarded 1st place at the Department of Animal Science, Dr. Joe V. Whiteman Award for Excellence in Oral Presentation of Scientific Information by Graduate Students.*
13. [§]A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2015). CO-MAP packaging to extend shelf-life of aged beef longissimus muscle. Food Science Graduate Students Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium, February 17, 2015.
***Awarded 1st place at the Food Science Graduate Student Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium.*
14. [§]K. M. Price, A. R. English, G. G. Mafi, D. L. VanOverbeke, **R. Ramanathan**. (2014). Effects of water- and oil-based rosemary on ground beef quality. 11th Annual Biochemistry and Molecular Biology Research Symposium, Oklahoma State University, September 19-20.
15. [§]N. N. Elroy, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2014). Species-specific effects on non-enzymatic metmyoglobin reduction, Wentz Research Scholar Day, April 25, Oklahoma State University.
16. [§]M. Shelby, A. R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2014). Fluorescent properties of myoglobin during heat-induced denaturation. 11th Annual Biochemistry and Molecular Biology Research Symposium, September 19-20, Oklahoma State University.
17. [§]A.R. English, G. G. Mafi, D. L. VanOverbeke, and **R. Ramanathan**. (2014). Fluorescent properties of beef myoglobin during heat-induced denaturation. Food Science Graduate Students Oral Presentation, Oklahoma State University, Research Week, Food & Agricultural Products Center Research Symposium, February 16, 2014.
18. [§]N. N. Elroy, **R. Ramanathan**, G. G. Mafi, and D. L. VanOverbeke. (2013). Effects of myoglobin primary structure on non-enzymatic metmyoglobin reduction. 10th Annual Biochemistry and Molecular Biology Research Symposium, September 19-20, Oklahoma State University.

PROFESSIONAL ACTIVITIES TO TEACHING AND RESEARCH

Administrative responsibility

1. Animal and Food Science Research Coordinator: 2018-present
2. Animal and Food Science Undergraduate research scholar coordinator: 2016-present

Professional development

1. Participated in Academic Leadership Academy, one yearlong leadership program organized by Provost, Oklahoma State University. Two faculty from each college was selected for the academy (2018-2019)
2. Participated in Institute for Teaching & Learning Excellence (ITLE) Peer mentor cadre, one-semester long training for peer coaching, fall 2018
3. Participating in the College of Agricultural Sciences and Natural Resources' Peers Engaging in Teaching Excellence (PETE's) Program (2018-present; participated in three semesters; involved in observing peer's class and vice versa)
 - 2018 fall: Dr. Sue Fairbank (Natural Resources)
 - 2019 spring: Mr. Nathan Smith (Agricultural Education)
 - 2019 fall: Ms. Samantha Blackwell (Agricultural Communication)
4. Faculty Certification Program:
 - Completed Institute for Teaching & Learning Excellence (ITLE) sponsored Provosts faculty development initiative "Faculty certificate program: Integrating and Assessing Writing in your class", 2013, Provost's Initiative: Focus on General Education.
 - Completed Institute for Teaching & Learning Excellence (ITLE) sponsored Provosts faculty development initiative "Critical Thinking Workshop Series", 2014-2015.
5. Attended the College of Agricultural Sciences and Natural Resources Teaching with Technology workshop, Oklahoma State University, January 12, 2017
6. Attended the College of Agricultural Sciences and Natural Resources Teaching with Technology workshop, ITLE, Oklahoma State University, January 5, 2016
7. Attended Brown Bag Meeting for Intro Course Instructors, organized by The Effective Teaching Committee, November 12, 2015, Oklahoma State University.
8. Attended AMSA webinar: AMSA Educational Webinar: Food science, the food industry, and the critics: Accusations and Conversations, March 25, 2015.
9. Attended: The teaching and advising connection: Best Practices for advising students, ITLE, March 25, 2015
10. Participated in OSU Advisors' conference, September 12, 2014, Student Union, Oklahoma State University
11. Participated in "Student Engagement, Student Success: Active Learning Strategies that Engage Students in the Classroom" workshop, ITLE, Nov 19, 2013
12. Participated in Assessment Series: Strategies for Curriculum Mapping, Institute for Teaching & Learning Excellence (ITLE), March 7, 2013.

Summary

Self-improvement in teaching

Certification program	2
Teaching workshops	12
Other activities	3

Invited talks

National and international	26
Regional	13

<i>Assistance to other courses</i>	13
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13. Attended the workshop “Developing classroom assignments for multiple assessment purposes”, Oct 10, 2013, Institute for Teaching & Learning Excellence (ITLE).
14. Video recorded my lecture and got written feedback from a senior faculty member (Dr. Shane Robinson, Associate Director, Institute for Teaching & Learning Excellence (ITLE), 2014).
15. Observed lectures of award-winning teaching faculties, Drs. DeSilva and Kropp, 2014.

INVITED PRESENTATIONS (total = 40)

Invited presentations: National and international (total = 26)

1. **Ramanathan, R.**, Aakur, S., Suresh, A., Kiyimba, F., Mafi, G. (2021). Comparison of machine learning algorithms to identify metabolomics features for predictive modeling of beef color. Presented at the 67th International Congress of Meat Science and Technology, Kraków, Poland, Virtual oral presentation Animal Tissue Biology session, id # 93229216667, August 2021.
2. **Ramanathan, R.** (2021). Metabolomics and proteomics approach in meat quality and color research. Keynote speaker at 10th Conference of Indian Meat Science Association and International Symposium on “Holistic Approach to the Meat Food Quality and Safety in Continuum from Farm to Fork.” November 25 to 27.
3. **R. Ramanathan** and H. Sharma. (2021). Application of metabolomics to elucidate quality changes in animal-derived foods. American Chemical Society, Division of Agricultural and Food Chemistry, Aug 25, virtual.
4. **R. Ramanathan.** (2021). Gas chromatography-based metabolomics to elucidate metabolic signatures in food. Presented at the International Webinar on Proteomics and Metabolomics in Food Science as a part of World Bank Funded National Agricultural Higher Education-Indian Council of Agricultural Research Project at National Dairy Research Institute, March 1 (virtual).
5. **R. Ramanathan.** (2021). Meat color and its basis. Department of Animal Medicine, Production and Health, University of Padova, Italy. Oct 20, Meat color (virtual).
6. **R. Ramanathan.** (2021). Meat science and its basis. Cellular Agriculture Course at Tufts University, Department of Biomedical Engineering, Oct 23
7. **R. Ramanathan.** (2021). Updates in Meat Color Research, Iowa State University, Department of Animal Science, Apr 13
8. **R. Ramanathan.** (2020). International Congress on Meat Science and Technology, Recent Updates in Meat Color Research: Integrating Traditional and High-Throughput Approaches, June 4, 2020.
9. **R. Ramanathan.** (2020). Role of Poultry Meat Industry in Boosting Economy: an Indian and US Perspective. Presented at the National Agricultural Higher Education Project – Indian Council of Agricultural Research at College of Avian Sciences and Management (CASM), Kerala Veterinary & Animal Sciences University (virtual).
10. **R. Ramanathan.** (2020) Recent Updates in Meat Color Research. University of Melbourne, Australia, June 4, 2020 (virtual).
11. **R. Ramanathan.** (2020). Meat color and its basis. Department of Animal Medicine, Production and Health, University of Padova, Italy. Oct 7, Meat color (virtual).
12. **R. Ramanathan.** (2019). American Chemical Society, Agricultural and Food Chemistry Division Young Scientist Award talk on Biomolecular Interactions of Myoglobin, Mitochondria, and Metabolites, San Diego, California, Aug 26.
13. **R. Ramanathan.** (2019). American Meat Science Association Educational Webinar on Omics 101: Omics in Meat Science, Oct 28.

14. **R. Ramanathan** and M. C. Hunt. (2019). Update on Meat Color Research Protocols. Presented at the American Meat Science Association Reciprocal Meat Conference, Fort Collins, Colorado, June 23-26.
15. **R. Ramanathan**. (2019). Recent updates in Meat Color: Teaching and Research Perspective. Department Graduate Student Seminar, University of Illinois, Nov 14.
16. **R. Ramanathan**. (2019). Advanced Research Tools in Meat Quality and Food Safety. Indian Council of Agricultural Research-National Research Centre on Meat, Hyderabad, India.
17. **R. Ramanathan**, A. English, G. G. Mafi, and D. L. VanOverbeke. (2019). Effects of extended aging, modified atmospheric packaging, and display time on metmyoglobin reducing activity and oxygen consumption of high-pH beef. Presented at the Southern Section American Society of Animal Science Meats Session, Oklahoma City, Oklahoma, Jan 2019.
18. **R. Ramanathan**, E. Bechtold, S. Suman, S. Mohanty, S. Mazumder, S. Krishnan, R. Nerimetla, G. G. Mafi, D. L. VanOverbeke, and R. Ramanathan. (2019). Species-specificity in metmyoglobin reduction. Presented at the Southern Section American Society of Animal Science Meats Session, Oklahoma City, Oklahoma, Jan 2019.
19. **R. Ramanathan**, R. Mitacek, G. G. Mafi, and D. VanOverbeke. (2018). Biochemistry of dark-cutting beef. Meat and Muscle Biology concurrent session at the American Meat Science Association Reciprocal Meat Conference, Kansas City, Missouri, June 24-27.
20. **R. Ramanathan**. (2018). Recent updates in meat quality research, College of Veterinary and Animal Sciences, Kerala, India, Dec 2018
21. **R. Ramanathan**, R. Mitacek, A. Abraham, G. G. Mafi, and D. VanOverbeke. (2018). Application of metabolomics to improve beef color. The Institute of Food Technologists Annual Meeting, Chicago, Illinois, July 19-22.
22. **R. Ramanathan**. (2018). Alternate meat protein sources. Innovate, American Society of Animal Science, Atlanta, Georgia.
23. **R. Ramanathan**, D. VanOverbeke, and D.L. Stein N. Hettiarachchy. (2018). Use of 3D Simulation Models to Enhance Student Learning in a Food Science Class. North American Colleges and Teachers of Agriculture (NACTA) Annual Conference, Iowa State University, June 2018.
24. **R. Ramanathan**, G. G. Mafi, and D. VanOverbeke. (2018). Meat Processing, Packaging, and Retailing in the USA: Industry Perspectives, Innovations, and Major Challenges. Indian Council of Agricultural Research-National Research Centre on Meat, 21 days Summer School on “Innovations in the livestock sector and doubling farmers income: Strategies and opportunities in the meat value chain” Hyderabad, India.
25. **R. Ramanathan**. Metabolomics of Beef Color. (2017). Meat and Muscle Biology concurrent session at the American Meat Science Association Reciprocal Meat Conference, College Station, Texas, June 15-18.
26. **R. Ramanathan**. The US Meat Industry: Processing, Strategies, and Opportunities. (2015). Kancor Ingredients, Cochin, India. January 5.

Invited presentations: Regional/Oklahoma State University (total = 14)

27. Institute for Teaching and Learning Excellence Faculty Teaching Session on Jan. 14. A Conversation with Two Faculty Members on how they Achieved Student Engagement Student Success during the Pandemic (invited; program canceled)
28. Identify early, retain early. Oklahoma State University Retention Conference, Mar 6, 2019
29. How to teach a large lecture class. Institute for Teaching and Learning Excellence - Graduate Teaching Assistant Conference, Oklahoma State University, Aug 2019.

30. How to interact with Generation Z. Institute for Teaching and Learning Excellence, Oklahoma State University, September 2019.
31. Gave an overview of Meat quality and food wastage. Oklahoma State Science and Engineering Fair (OSSEF) Teacher workshop. Meet STEM researchers to generate ideas for student research topics, Oklahoma SU, Tulsa, Oct 12, 2019
32. Food Security, American Chemical Society, Oklahoma State University chapter, Nov 28, 2018
33. Engaging Students in Large Classrooms. (2018). College of Agricultural Sciences and Natural Resources 2018 Fall Teaching Workshop, Oklahoma State University, August 14, 2018.
34. Food Safety from Farm to Fork. (2017). National Youth Leadership Conference, National Swine Registry, Oklahoma State University, April 8th.
35. Active Teaching Strategies. (2016). Institute for Teaching and Learning Excellence Conference, Oklahoma State University, August 2016.
36. Career Opportunities in Food Science. (2015). Food Science Research Symposium, University of Central Oklahoma, May 1, 2015.
37. The Oklahoma State University Annual Graduate Teaching Assistant Conference on Teaching: Understanding the culture of American Students. (2015). The Oklahoma State University Annual Graduate Teaching Assistant Conference, Wednesday, August 12, 2015, organized by the Graduate College and Institute for Teaching and Learning Excellence, Oklahoma State University.
38. Career and Research Opportunities in Food Science. (2015). Scholars Day, Oklahoma State University, October 15, 2015.
39. Recent Advances in Food Chemistry and Food Analysis. (2014). Nutrition and Food Management, Human Environmental Sciences University of Central Oklahoma, October 2014.
40. Received an invitation to serve on early-career faculty panel, hosted by the Institute for Teaching and Learning Excellence (ITLE), a panel session as part of the Early Career Faculty Support program. The panel was comprised of three faculty in the first years of their academic careers who have established successful research and teaching agendas (due to personal reasons, I was not able to accept that invitation), 2013.

Assistance to other courses within Oklahoma State University

1. Agricultural Education, Professionalism and Career Development Events, fall 2021
2. Career Skills & Professionalism (ENTO/PLP5992), Effective teaching, fall 2021
3. Career Skills & Professionalism (ENTO/PLP5992), Effective teaching, fall 2020
4. Animal Science Undergraduate Research Scholars: Opportunities, Introduction to Animal Science (ANSI 1124) Honors section, 2020, 2021
5. Agricultural Education, Professionalism and Career Development Events, spring 2019
6. Animal Science Undergraduate Research Scholars: Opportunities, Introduction to Animal Science (ANSI 1124) Honors section, 2019.
7. Agricultural Animals of the World (ANSI 3903): Exploring India, spring 2019
8. Career Skills & Professionalism (ENTO/PLP5992), Effective teaching, fall 2018
9. Agricultural Animals of the World (ANSI 3903): Exploring India, spring 2018
10. Cooked color defects in beef. Current Topics for Chemical Professionals. The Chemistry of Life, Chemistry - 2980, fall 2017, Department of Chemistry.

11. Animal Science Undergraduate Research Scholars: Opportunities, Introduction to Animal Science (ANSI 1124) Honors section, 2017.
12. Analysis of meat products. FDSC 4333: Meat processing, 2017
13. Chemistry of Meat Color. Current Topics for Chemical Professionals, The Chemistry of Life, Chemistry - 2980, Fall 2016, Department of Chemistry.
14. AG 1011: Agriculture orientation, Interacted with students to explain the opportunities in Food Science, 2013-2015
15. ANSI 4863: Capstone Animal Agriculture, Guest lecture, Careers and opportunities in Food Science, 2012-2015

Other activities: National level

1. Podcast, Meat color and shelf-life, June 2020
2. Featured in Meat and Muscle Biology Editorial Board Video, 2020
3. Featured in Association of Public Land-Grant University Annual Meeting Video, 2020

Other activities: Regional/Oklahoma State University

4. Gave a talk on undergraduate research opportunities at Minorities in Agriculture, Natural Resources, and Related Sciences (MANRRS), Oklahoma State University, Sep 14, 2020
5. Oklahoma State Science & Engineering Fair, Teacher workshop meeting, Oct 10 2020
6. Conducted workshops at Future Collegiate Leader's Conference. Dip n Dots – 80 students, Nov 10, 2019
7. Organized Future Farmers of America tour of Food and Agricultural Product Center from Shelly, Utah, Oct 2019
8. Organized Future Farmers of America tour of Food and Agricultural Product Center, Bristow OK, 2019
9. County Educator tour and introduction to Food Science, Jun 2019
10. Hosted 96 youth during an educational workshop at the State 4-H Roundup titled "Don't Judge a Burger by its Color" Oklahoma State University, 2017-2020.
11. Represented the department at the Junior Day (for high school junior/senior), Apr 2019
12. Represented the department at the Admitted Day (for incoming freshmen), Feb 2019
13. Hosted 68 high school students from different areas of Oklahoma as a part of Oklahoma State University-National Laboratory Day event to promote high school students and their teachers to know more about the opportunities in STEM research and career, 2014-2018
14. Hosted 45 students from Bristow FFA chapter to tour Food and Agricultural Product Center, Oklahoma State University to give an overview of food science, June 2019
15. Represented the department at the Scholars' Day (for high school students), Oct 2014
16. Represented the department at the 2015-2016 Oklahoma State University Junior Day, April 11, Gallagher-Iba Arena
17. Served on the panel – "Have questions about graduate school? Graduate Student Panel, the Animal Science Leadership Alliance, Oct 13th, Department of Animal Science.
18. Represented the department at the Up Close (meeting with high school students) – 2012 to present.
19. Represented the department at the Academic Expo – 2012 to present.

20. Represented the department at the Ag-Round Up – 2012 to present.
21. Attended Pre-service Science Teacher Research, Symposium, and Reception, April 22nd, Willard Anderson Living Room, Oklahoma State University.

PROFESSIONAL SERVICE

Food Science CDE Food Science & Technology

1. FFA Food Science Superintendent (2012-present)
2. Developed Food Science CDE educational videos
3. Provided on-site educational training for the regional Food Science CDE at Salina, OK, March 2016
4. Provided educational training for approximately 84 students from different part of the state (Alva High School, Lawton High, and Tipton) to learn more about the CDE, 2013 to present.
5. Food Science curriculum, Career Tech, Feb 4, 2015
6. Coordinator for the Connecticut Future Farmers of America (FFA) Food Science Career Development Contest, 2008-2012
7. Coordinator for the Connecticut Future Farmers of America (FFA) Meat Science Career Development Contest, 2007-2012

<u>Summary</u>	
<u>Total committees = 69</u>	
<i>National leadership</i>	<i>1</i>
<i>National committees</i>	<i>29</i>
<i>University committee</i>	<i>14</i>
<i>College committees</i>	<i>12</i>
<i>Department committees</i>	<i>14</i>

National/Professional organizations

1. American Meat Science Association Co-chair, Concurrent technical session 1 – Best practices for spices, seasonings, and flavorings, 2021
2. American Meat Science Association Hunter International Travel Award Committee, 2021
3. American Meat Science Association, Reciprocal Meat Conference, Planning Committee, 2021
4. American Meat Science Association, Reciprocal Meat Conference, Reciprocity session moderator, 2021
5. North American Colleges & Teachers of Agriculture, Educator Award Committee, 2021
6. Southern Section American Society of Animal Science meeting, Meats section chair, 2021
7. Southern Section American Society of Animal Science Young Researcher Awards committee – 2021
8. Southern Section American Society of Animal Science Young Educator Awards committee – 2021
9. American Meat Science Association, Achievement Award Committee, 2020
10. North American Colleges & Teachers of Agriculture, Educator Award Committee, 2020
11. North American Colleges & Teachers of Agriculture, Teacher Recognition Committee, 2019
12. American Meat Science Association Robert Cassens Scholar Award selection committee, 2019
13. Southern Section American Society of Animal Science meeting, Meats session chair, 2019
14. American Meat Science Association, Reciprocal Meat Conference, Planning Committee, 2018
15. Southern Section American Society of Animal Science, Program Committee, Meats, 2018
16. Southern Section American Society of Animal Science Young Researcher Awards committee – 2018

17. Served as a moderator for Reciprocal Meat Conference, American Meat Science Association Annual Meeting, Reciprocation session, Packaging, Jun 2018
18. Served as a moderator for MS and Undergraduate Research Poster Competition winners' oral presentation at American Meat Science Association Reciprocal Meat Conference, College Station, Texas, June 2017.
19. Southern Section American Society of Animal Science Young Educator Awards committee – 2017
20. American Meat Science Association, Research Committee, 2017-present
21. Institute of Food Technologists, Muscle Foods Division, Past-chair, 2016-2017
22. Institute of Food Technologists, Oklahoma Division, Member-at-large, 2016-2018
23. Institute of Food Technologists, Muscle Foods Division, Chair, 2015-2016
24. Institute of Food Technologists, Muscle Foods Division, Division Enhancement Workgroup - 2015. Responsible for making recommendations to the IFT Board of Directors to promote collaboration among divisions
25. Institute of Food Technologists, Muscle Foods Division, Chair-elect, 2014-2015
26. Institute of Food Technologists, Muscle Foods Division, Graduate paper competition chair, 2014-2015
27. Institute of Food Technologists, Muscle Foods Division, Technical Research Paper abstract review chair, 2014-2015
28. Institute of Food Technologists, Muscle Foods Division, Member-at-large, 2012-2014
29. American Meat Science Association Meat Processing Award Committee, 2014-2015

Oklahoma State University: University committee

1. Graduate Faculty Committee, Group 1, Chair, 2021-present.
2. Group1 Graduate Education Research Award Committee, April 2021
3. 2021 Eminent Faculty Award Screening Committee
4. MAGS/ProQuest Distinguished Thesis Award Group Selection committee, 2021
5. 2021-22 Committee on Honorary Degrees
6. Oklahoma State Science and Engineering Fair OSSEF Steering Committee, 2020-present
7. Grade Appeal Board, 2020-present
8. Graduate Faculty Training Working Group, Grad Faculty Council, 2019-to present
9. Graduate Faculty Committee, Group 1, Vice-chair, 2019-2021.
10. Academic Standards and Policies Committee, 2019-present
11. Group 1 Graduate Faculty Membership Committee, 2019
12. Committee on Honorary Degrees, 2019
13. General faculty representative on the Grade Appeals Boards: 2015-2017
14. Clicker evaluation committee, Institute for Teaching and Learning Excellence (ITLE): 2015

Oklahoma State University: College of Agricultural and Natural Resources committees

1. Biosystem Engineering faculty search committee, 2021
2. Whatley Award Committee, 2020

3. 4-H Innovative Product Development Contest Committee (inaugural food product development competition in Oklahoma) - 2019
4. Co-chair, Committee on Effective Teaching, College of Agricultural Sciences and Natural Resources, 2019 - 18
5. Chair, Graduate Student Advising Award, College of Agricultural and Natural Resources Early Career Award in Teaching committee, 2017
6. Supplemental Pay task force committee, 2016
7. College of Agricultural and Natural Resources Early Career Award in Teaching committee, 2016
8. Regents Distinguished Teaching Nominations selection committee, College level, 2015
9. Vice-chair, Committee on Effective Teaching, College of Agricultural Sciences and Natural Resources, 2015 - 18
10. Committee on Effective Teaching, College of Agricultural Sciences and Natural Resources, 2014-present
11. Agriculture Faculty Council, Department of Animal Science Representative, 2014 - 2016
12. Division of Agricultural Sciences and Natural Resources (DASNR) Food Safety Initiative team, 2012- present

Oklahoma State University: Department of Animal and Food Sciences committees

1. Head of the Department, Search and Screening Committee, 2021-2022
2. Interview and selection committee for the Grant Accountant, 2021
3. Food Science program promotion committee, 2017 - present
4. Interview and selection panel for the administrative office assistant, January 2017
5. Chair, Department Laboratory Coordinator position committee, December 2016
6. Interview and selection panel for the Senior Office Assistant, June 2016
7. Interview and selection panel for the Animal Science Leadership Alliance, March 2015
8. Search committee, Food safety specialist, 2014
9. Graduate Food Science Program Admission Review Committee, 2014-present
10. Animal Science Banquet Committee, 2014 - present
11. Department of Animal Science Research Report committee, 2014- present
12. Department of Animal Science Reappointment Promotion Tenure document review committee, 2014
13. Department of Animal Science Research Committee, 2012-present
14. Department of Animal Science Teaching committee, 2012-present

Administrative responsibilities: Oklahoma State University: Department of Animal and Food Sciences

1. Department of Animal and Food Sciences, Research Coordinator: 2019-present
2. Department of Animal and Food Science, Undergraduate Research Coordinator: 2016-present

TEACHING RESPONSIBILITIES

Fundamentals of Food Science (FDSC 1133): A freshman-level class focusing on the fundamental aspects of food science. Students from 19 different majors are enrolled in this class; 100% responsibility.

Food Chemistry 1 (FDSC 3373): A junior-level class concentrating on the chemistry of food components. Students from four different majors from three colleges are enrolled in this class; 100% responsibility.

Food Chemistry II (FDSC 4373): A senior-level class covering the ingredient functionality and product development. On average, students enrolled in three different majors from two colleges register in this class; 100% responsibility.

Food Analysis (FDSC 4763): A senior-level class focusing on the analysis of various food components. Food and animal science majors enroll in this class; 100% responsibility.

Advanced Food Chemistry (FDSC 5373): A graduate-level class emphasizing the advanced aspect of food science and chemistry of food components. Food and animal science majors enroll in this class; 100% responsibility.

Teaching Practicum – ANSI 5010 (Spring): Teaching practicum is an independent study to learn more about teaching and classroom techniques. Mr. Thiago Souza, a Ph.D. candidate in Food Science was enrolled in spring 2016.

TEACHING EVALUATION

*From fall 2015, the university has adopted online evaluation; hence the instructor overall evaluation scale changed from 4 to 5.

1. **FDSC 1133: Fundamentals of Food Science (lecture only, taught every spring and fall)**

Spring 2013	Instructor overall: 3.65/4	Course overall: 3.71/4	Enrollment: 43
Fall 2013	Instructor overall: 3.81/4	Course overall: 3.73/4	Enrollment: 56
Spring 2014	Instructor overall: 3.93/4	Course overall: 3.91/4	Enrollment: 71
Fall 2014	Instructor overall: 3.81/4	Course overall: 3.85/4	Enrollment: 83
Spring 2015	Instructor overall: 4.00/4	Course overall: 3.96/4	Enrollment: 65
Fall 2015*	Instructor overall: 4.89/5	Course overall: 3.83/4	Enrollment: 118
Spring 2016*	Instructor overall: 4.86/5	Course overall: 3.77/4	Enrollment: 68
Fall 2016*	Instructor overall: 4.93/5	Course overall: 3.90/4	Enrollment: 112
Spring 2017*	Instructor overall: 4.92/5	Course overall: 3.86/4	Enrollment: 93
Fall 2017*	Instructor overall: 4.83/5	Course overall: 3.83/4	Enrollment: 125
Spring 2018*	Instructor overall: 4.85/5	Course overall: 3.76/4	Enrollment: 91
Fall 2018 *	Instructor overall: 4.89/5	Course overall: 3.82/4	Enrollment: 123
Spring 2019*	Instructor overall: 4.93/5	Course overall: 3.93/4	Enrollment: 91
Fall 2019*	Instructor overall: 4.78/5	Course overall: 3.68/4	Enrollment: 125
Spring 2020*	Instructor overall: 4.83/5	Course overall: 3.76/4	Enrollment: 88
Fall 2020†	Overall indicator:4.72/5		Enrollment: 123
Spring 2021†	Overall indicator: 4.78/5		Enrollment: 55
Fall 2021†	Overall indicator:4.71/5		Enrollment: 102

2. **FDSC 3373: Food Chemistry I (both lecture and lab, taught every fall)**

Fall 2012	Instructor overall: 3.96/4	Course overall: 3.88/4	Enrollment: 27
Fall 2014	Instructor overall: 3.91/4	Course overall: 3.87/4	Enrollment: 52
Fall 2016*	Instructor overall: 4.74/5	Course overall: 3.81/4	Enrollment: 56
Fall 2018*	Instructor overall: 4.86/5	Course overall: 3.80/4	Enrollment: 56
Fall 2019*	Instructor overall: 4.90/5	Course overall: 3.81/4	Enrollment: 56
Fall 2020*	Overall indicator: 4.90/5		Enrollment: 55
Fall 2021*	Overall indicator: 4.91/5		Enrollment: 51

3. **FDSC 4763: Analysis of Food Products (both lecture and lab, taught alternate spring)**

Spring 2013	Instructor overall: 3.69/4	Course overall: 3.62/4	Enrollment: 21
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Spring 2015	Instructor overall: 3.96/4	Course overall: 3.96/4	Enrollment: 36
Spring 2017*	Instructor overall: 4.88/5	Course overall: 3.88/4	Enrollment: 25
Spring 2019*	Instructor overall: 4.68/5	Course overall: 3.58/4	Enrollment: 25
Spring 2021‡	Overall indicator: 4.96/5		Enrollment: 28
4. FDSC 4373: Food Chemistry II (both lecture and lab, taught alternate fall)			
Fall 2013	Instructor overall: 4.00/4	Course overall: 3.93/4	Enrollment: 27
Fall 2015*	Instructor overall: 4.89/5	Course overall: 3.89/4	Enrollment: 35
Fall 2017*	Instructor overall: 4.80/5	Course overall: 3.90/4	Enrollment: 21
5. FDSC 5373: Advanced Food Chemistry (both lecture and lab, taught alternate spring)			
Fall 2013	Instructor overall: 3.67/4	Course overall: 3.78/4	Enrollment: 12
Spring 2016*	Instructor overall: 4.88/5	Course overall: 3.86/4	Enrollment: 12
Spring 2018*	Instructor overall: 5.00/5	Course overall: 4.00/4	Enrollment: 8
Spring 2020*	Instructor overall: 4.19/5	Course overall: 3.19/4	Enrollment: 16
6. ANSI 5213: Advanced Meat Science (50% responsibility)			
Summer 2016§			Enrollment: 7

§Minimum number of online-student responses were not received. Hence, course evaluation is not reported.

‡The university adopted a new evaluation scheme.

PROFESSIONAL AFFILIATIONS

1. American Society of Animal Science (ASAS)
2. American Meat Science Association (AMSA)
3. Institute of Food Technologists (IFT)
4. North American Colleges & Teachers of Agriculture (NACTA)
5. American Chemical Society (ACS)