

CURRICULUM VITAE

Li Zhang, Ph.D.

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APPOINTMENTS

Assistant Professor	Department of Poultry Science, Mississippi State University	August 2023-Present
Assistant Research Professor	Department of Poultry Science, Mississippi State University	July 2018-August 2023
Postdoctoral Associate	Department of Food Science, Nutrition, and Health Promotion, Mississippi State University	January 2018-June 2018
Research Assistant	Department of Food Science, Nutrition, and Health Promotion, Mississippi State University	August 2014-December 2017
Research Fellow	Jilin Academy of Agricultural Science, Changchun, China	July 2006-August 2013
Research Assistant	Harbin Institute of Technology, Harbin, China	August 2005-July 2006

EDUCATION

Mississippi State University	2014-2017	Ph.D.	Nutrition
Jilin University, Changchun, China	2010-2013	Ph.D.	Agriculture Biological Environmental and Energy Engineering
Northeast Agricultural University, Harbin, China	2002-2005	M.S.	Agricultural Product Processing and Storage Engineering
Northeast Agricultural University, Harbin, China	1998-2002	B.S.	Food Science and Engineering

TEACHING EXPERIENCE

1. Instructor. Advanced Techniques in Agricultural Microbiome Analysis, Department of Poultry Science, Mississippi State University, PO/ADS8123 Fall 2025.
2. Instructor. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2025.
3. Instructor. Advanced Techniques in Agricultural Microbiome Analysis, Department of Poultry Science, Mississippi State University, PO8990 Fall 2024.

4. Instructor. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2024.
5. Participating instructor. Scientific Writing, Department of Basic Sciences, Mississippi State University, CVM 8973 Spring 2024.
6. Guest lecture. PO4033 Diseases of Poultry. Department of Basic Sciences, Mississippi State University, Spring 2024.
7. Guest lecture. ADS4993/6993 Animal Microbiome. Department of Animal and Dairy Sciences, Mississippi State University, Spring 2024.
8. Instructor. Poultry Processing, Department of Poultry Science, Mississippi State University, PO 4514/6514 Fall 2023.
9. Instructor. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2023.
10. Instructor. Undergraduate directed individual study (DIS), Mary Beth Tingle, GA4800 Spring 2023.
11. Instructor. Undergraduate directed individual study (DIS), Hailey Fugate, PO4000 Spring 2023.
12. Secondary Instructor. Graduate directed individual study (DIS), Dylan Lesak, Sawyer Smith, Lizzie Zaldivar, Guyue Tang, FNH7000 Spring 2023.
13. Instructor. Molecular techniques in poultry research, Department of Poultry Science, Mississippi State University, PO8990 Fall 2022.
14. Instructor. Undergraduate directed individual study (DIS), Mary Beth Tingle, GA4800 Fall 2022.
15. Instructor. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2022.
16. Participating instructor. Scientific Writing, Department of Basic Sciences, Mississippi State University, CVM 8973 Spring 2022.
17. Instructor. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2021, 4.8 on a 5.0 scale.
18. Participating instructor. Graduate seminar. Department of Poultry Science, Mississippi State University, PO 8111 Spring and Fall 2021.
19. Participating instructor. Scientific Writing, Department of Basic Sciences, Mississippi State University, CVM 8973 Spring 2021.
20. Instructor. Undergraduate directed individual study (DIS), Mackenzie Ripper, GA4800 Spring 2022.
21. Instructor. Undergraduate directed individual study (DIS), Mackenzie Ripper, GA4800 Fall 2021.
22. Instructor. Undergraduate directed individual study (DIS), Mackenzie Ripper, GA4800 Spring 2021.

23. Guest lecture. Poultry product safety & sanitation, Department of Poultry Science, Mississippi State University, PO/FNH 4512/6512 Spring 2020.
24. Guest lecture. Measuring and interpreting microbiome. Department of Food Science, Nutrition and Health Promotion, Mississippi State University, FNH 8773 Human Microbiome and Health, Fall 2020.
25. Participating instructor. Scientific Writing, Department of Basic Sciences, Mississippi State University, CVM 8973 Spring 2020.
26. Graduate directed individual study (DIS), Claudia Castañeda, PO7000 Fall 2019.
27. Instructor. Molecular techniques in poultry research, Department of Poultry Science, Mississippi State University, PO8990 Fall 2019, 4.8 on a 5.0 scale.

POSTDOC MENTORED

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

GRADUATE STUDENTS MENTORED

1. Rita Ugoh-MS-Major Advisor (Current Student, 2026 Expected graduation date)
2. Sunita Shrestha- PhD-Major Advisor (Current Student, 2027 Expected graduation date)
3. Manhong Wang-PhD-Major Advisor (Current Student, 2026 Expected graduation date)
4. Haley Nabors- MS-Major Advisor (Current Student, 2025 Expected graduation date)
5. Hailey Fugate-MS-Major Advisor (2025 Fall graduate)
6. Jiddu Joseph-PhD-Major Advisor (2023 Fall semester, moved to South Dakota State University)
7. Diksha Pokhrel-PhD-Major Advisor (2024 Summer graduate)
8. Hudson T. Thames- PhD-Major Advisor (2024 Summer graduate)
9. Abubakar Isah- MS-Major Advisor (2024 Summer graduate)

- 10. Sabin Poudel-PhD-Major Advisor (2023 Fall graduate)**
- 11. Priyanka Devkota-MS-Major Advisor (2022 Fall graduate)**
- 12. Deepa Chaudhary-MS- Major Advisor (2022 Fall graduate)**
- 13. Linan Jia- PhD-Major Advisor (2021 Fall graduate)**
- 14. Tianmin Li-MS-Major Advisor (2020 Fall Graduate)**
15. Tolulope Tiwa Ogundipe-PhD-Co-advisor (2028 Expected graduation date)
16. Randy Domer-PhD- Committee Member (2028 Expected graduation date)
17. Carlos Alexis Guardado Martinez- PhD-Committee Member (2027 Expected graduation date)
18. Charis Waters-PhD-Committee Member (2026 Expected graduation date)
19. Nelly Cribillero Chuquihuaccha- PhD-Committee Member (2024 Expected graduation date)
20. Samantha Suzanne Plocher- MS-Committee Member (2025 Expected graduation date)
21. Emily Magee- MS-Committee Member (2025 Expected graduation date)
22. Oladayo Apalowo-PhD-Committee Member (2024 Fall graduate)
23. Tockie Vanessa Hemphill-PhD-Committee Member (2025 Expected graduation date)
24. Guyue Tang- MS-Committee Member (2025 Expected graduation date)
25. Fozol Ovi- PhD-Committee Member (2024 Summer Graduate)
26. Ishab Poudel-PhD-Committee Member (2023 Fall graduate)
27. Stephen Schade-MS-Committee Member (2023 Summer Graduate)
28. ElsiAnna Rodewald- MS-Committee Member (2024 Summer Graduate)
29. Dylan Lesak- MS-Committee Member (2023 Fall graduate)
30. Jiddu Joseph-MS-Committee Member (2023 Fall graduate)
31. Grace Umutesi-MS-Committee Member (2022 Fall graduate)
32. Ying-Chen Huang-PhD-Committee Member (2022 Spring graduate)
33. Qingzhou Wang-PhD-Committee Member (2021 Fall graduate)
34. Ayoub Mousstaaid-MS-Committee Member (2021 Spring Graduate)
35. Hudson T. Thames-MS-Committee Member (2021 Spring Graduate)
36. Courtney A. Fancher-MS-Committee Member (2021 Spring Graduate)
37. Sabin Poudel-MS-Committee Member (2020 Summer Graduate)
38. Bo Zhang-MS-Committee Member (2020 Fall Graduate)
39. Chrysta N. Beck-MS-Committee Member (2019 Fall Graduate)

UNDERGRADUATE STUDENTS MENTORED

1. Zoe Lohf (2025 – current)
2. Keaura Mearday (2025 – current)
3. Sulav Jung Thapa (2023-current. 2024 USDA ARS undergraduate summer internship project, 2024 ORED URCD #342)
4. Hailey Fugate (2023, USDA ARS undergraduate summer internship project)
5. Michael Walker (2022)
6. Mary Elizabeth Tingle (2022 CALS/MAFES Undergraduate Research Scholars Program)
7. Javad A'arabi – major advisor (2022 Honors thesis)
8. Dylan Lesak (2021 William M. White Special Project)
9. Mackenzie Ripper (2020 and 2021 CALS/MAFES Undergraduate Research Scholars Program, got into Vet School at NCSU fall 2024)
10. Samantha Curran (2020)
11. Sadie White (2019 CALS/MAFES Undergraduate Research Scholars Program)
12. Brian Ko- Committee Member (2019 Honors thesis)
13. Peyton Prine (2019)
14. Caleb LeGrand (2018)
15. Austin Cook (2018)

STUDENT AWARDS

1. Sunita Shrestha, 2025 Lallemand Animal Nutrition Scholarship Finalist.
2. Manhong Wang. 2025.
3. Hailey Fugate. 2025. SCAD Travel Award for IPSF (\$250).
4. Hailey Fugate. 2025. IPPE Travel Award (\$500). Southern Ag Credit.
5. Manhong Wang. 2024. International Paper Scholarship (\$1,500). Mississippi Poultry Association.
6. Diksha Pokhrel. 2024. IPPE Travel Award (\$500). Southern Ag Credit.
7. Jiddu Joseph. 2024. AAAP Scholarship.
8. Diksha Pokhrel. 2023. Institute of Food Technologists Mid-South Section Scholarship (\$2,000).
9. Diksha Pokhrel. 2023. PSA Travel Award (\$1,500). Bank Plus.
10. Hudson T. Thames. 2023. PSA Travel Award (\$1,500). Bank Plus.
11. Sabin Poudel. 2023. MAFES Excellent Research Award (\$2,000). MS Agricultural and Forestry Experiment Station.

12. Sabin Poudel. 2023. CALS Student Research Ambassador. MSU College of Agriculture and Life Sciences.
13. Mary Beth Tingle. 2023. 1st place (\$250) amongst the College of Forestry students in the Biological Sciences portion of the MSU 2023 Spring Undergraduate Research Symposium.
14. Sabin Poudel. 2022. Student of The Year (\$1,000). Poultry Science Association Hatchery.
15. Deepa Chaudhary. 2022. Certificate of Excellence in Genetics and Molecular Biology. Poultry Science Association.
16. Deepa Chaudhary. 2022. Travel Award (\$1,250). BankPlus.
17. Priyanka Devkota. 2022. Certificate of Excellence in Immunology, Health and Disease. Poultry Science Association.
18. Priyanka Devkota. 2022. International Paper Scholarship 1st place (\$2,000). Mississippi Poultry Association.
19. Sabin Poudel. 2022. International Paper Scholarship 2nd place (\$1,500). Mississippi Poultry Association.
20. Sabin Poudel. 2021. Certificate of Excellence in Genetics and Molecular Biology. Poultry Science Association.
21. Sabin Poudel. 2021. International Paper Scholarship 1st place (\$5,000). Mississippi Poultry Association.
22. Tianmin Li. 2019. International Paper Scholarship 2nd place (\$2,000). Mississippi Poultry Association.
23. Tianmin Li. 2019. International Poultry Scientific Forum Southern Agricultural Travel Award (\$750).

GRANTS FOR RESEARCH OR STUDY:

Throughout my career, I have actively established and maintained research relationships with the scientists of MSU, other universities, and the food and poultry industries.

Proposals submitted since last promotion and total dollar amount: 73;
\$ 14,478,930

Proposals submitted funded and not funded:									
Year	Funded (\$)			Pending (\$)			Not Funded (\$)		
	PI	Co-PI	Total	PI	Co-PI	Total	PI	Co-PI	Total
2019	52,400	98,480	150,880			0		499,997	499,997
2020	112,305	0	112,305			0	449,138	1,372,569	1,821,707
2021	54,800	0	54,800			0	299,776	624,455	924,231
2022	128,761	414,445	543,206			0	650,000	1,249,139	1,899,139
2023	400,726	505,760	906,486			0	650,000	1,925,138	2,575,138
2024	632,745	317,000	949,745			0	280,956	300,000	580,956
2025	107,050	417,000	524,050	293,096	1,693,195	1,986,291	0	949,999	949,999
Total	1,488,787	1,752,685	3,241,472	293,096	1,693,195	1,986,291	2,329,870	6,921,297	9,251,167
Cumulative Funding Details-Li Zhang Lab (2019 - 2025):									
	PI		Co-PI		Total (\$)				
Total Applied (\$)	4,111,753		10,367,177		14,478,930				
Total Received (\$)	1,488,787		1,752,685		3,241,472				

PROJECTS FUNDED OR PENDING

1. USDA ARS, Cooperative Agreement 59-6064-4-001. Immunological and Physiological Characteristics of Poultry Vaccinated and/or Challenged with Avian Pathogenic *Escherichia coli* (APEC), Role: PI (08/01/2025-07/31/2026, \$184,269), Awarded.
2. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-4-011. Alternative *Mycoplasma gallisepticum* (MG) Vaccination Regimens for Enhancement of Protection Against Field Strain MG Infections. Role: PI (08/01/2025-07/31/2026, \$64,863), Awarded.
3. USDA APHIS, Integration of Artificial Intelligence Driven Surveillance and Drone Intervention to Reduce Avian Influenza Risks in Poultry, Role: Co-PI (10/01/2025-09/30/2028, \$1,693,195), Pending.
4. Contract with the University of Arkansas. Broiler house microbiome analysis, Role: Co-PI (04/01/2025-07/01/2025, \$3,350), Awarded.
5. Contract with the Oklahoma State University. Broiler chicken cecal microbiome analysis, Role: PI (01/10/2025-03/10/2023, \$3,700), Awarded.
6. MSU MAFES Strategic Research Initiative, Application of Culturomics to Identify and Isolate Core Beneficial Microbiomes for Enhanced Poultry Gut Health and Growth Performance, Role: PI (07/01/2025-06/30/2027, \$100,000), Awarded.
7. MSU MAFES Strategic Research Initiative, Unveiling Chicken Spoilage Dynamics: An Integrated Metagenomics, Metabolomics, and Machine Learning Approach, Role: Co-PI (07/01/2025-06/30/2027, \$100,000), Awarded.
8. USDA ARS, Cooperative Agreement 59-6064-4-001. Immunological and Physiological Characteristics of Poultry Vaccinated and/or Challenged with Avian Pathogenic *Escherichia coli* (APEC), Role: PI (08/01/2024-07/31/2025, \$216,787), Awarded.
9. USDA ARS, Cooperative Agreement 59-6064-4-004. Integrating Genomics, Epidemiology, and On-site Diagnostics for Poultry and Bovine Respiratory Bacterial Diseases Management. Role: PI (08/15/2024-08/14/2028, \$274,480), Awarded.

10. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-4-011. Alternative *Mycoplasma gallisepticum* (MG) Vaccination Regimens for Enhancement of Protection Against Field Strain MG Infections. Role: PI (08/01/2024-07/31/2025, \$76,309), Awarded.
11. USDA ARS, Cooperative Agreement 59-6064-4-003. Characterization of Avian Pathogenic *E. coli* Field Isolates and Identification of Potential Vaccine Targets in Commercial Poultry. Role: Co-PI (08/01/2024-07/31/2029, Funding \$317,000/year, Zhang's Credit 50%), Awarded.
12. USDA ARS 58-6066-2-022. MS Center for Food Safety and Post-Harvest Technology Initiative. A Comprehensive Culturomics Approach to Recover and Characterize Catfish Spoilage Bacteria. Role: PI (07/01/2024-06/30/2025, \$55,000), Awarded.
13. USDA ARS, undergraduate summer internship project 58-6064-3-009. Project #11: Reduction of Foodborne Pathogens and Antimicrobial Resistance in Poultry Production Environments, Role: PI (05/15/2024-05/14/2025, \$8,169), Awarded.
14. Mississippi State University Office of Research and Economic Development Undergraduate Research Program. #342: Image Recognition and Processing using OpenMV modules (Color and N-IR cameras) for health and disease monitoring in farms, Role: PI (2024-2025, \$2,000), Award.
15. General Memorandum of Agreement with Engrain. *In Vitro* testing of probiotics and their sensitivity to antibiotics, Role: PI (11/30/2023-02/21/2024, \$5,000), Awarded.
16. Contract with Auburn University. Organic acids trial cecal microbiome analysis, Role: PI (05/08/2023-05/23/2023, \$6,910), Awarded.
17. Contract with the University of Arkansas. Broiler house microbiome analysis, Role: PI (03/29/2023-7/03/2023, \$8,120), Awarded.
18. General Memorandum of Agreement with Jones Hamilton Company. Impact of PLT treatment on broiler performance in a 42-day grow out, Role: Collaborator (11/3/2023-12/14/2023, total \$33,695, \$600 to my lab), Awarded.
19. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-3-017. Developing Detection and Modeling Tools for the Geospatial and Environmental Epidemiology of Animal Disease. Minimizing Disease Transmission in Poultry through Rapid Detection and Predictive Models, Role: Co-PI (09/01/2023-08/31/2028, total \$3,073,602, \$100,507 to Zhang), Awarded.
20. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-9-014. Performance and physiological characteristics of poultry vaccinated and/or challenged with Avian Pathogenic *Escherichia coli* (APEC), Role: PI (07/31/2019-07/30/2024, total \$384,455, FY2023 \$94,559 to Zhang), Awarded.
21. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-9-016. Alternative *Mycoplasma gallisepticum* (MG) vaccination regimens for enhancement of protection against field strain MG infections, Role: PI (07/31/2019-07/30/2024, total \$346,878, FY2023 \$76,309 to Zhang), Awarded.

22. USDA ARS, undergraduate summer internship project 58-6064-3-009. Project #3: Employ an AI architecture and advanced encapsulation technology to develop phage-based biocontrol against bacterial superbugs via oral delivery in poultry, Role: PI (05/15/2023-05/14/2024, \$7,821), Awarded.
23. USDA ARS, Non-Assistance Cooperative Agreement 58-6064-2-014. Intervention strategies to mitigate avian *Escherichia coli* infections and antimicrobial resistance in the poultry environment, Role: Co-PI (09/15/2022-09/14/2027, FY2023, \$317,065), Awarded.
24. The Mississippi Center for Enhancing Utilization and Safety of Catfish and Other Aquatic Foods. Effects of environmental stress and antimicrobials on the health, microbiome, and product shelf-life of channel and hybrid catfish, Role: Co-PI (04/01/2023-03/31/2024, \$55,000), Awarded.
25. USPoultry and Egg Association #729, Evaluating Vertical Transmission of Salmonella Reading Outbreak Strain in Turkeys using Bioluminescent Imaging, Role: PI (05/01/2022-11/1/2023, \$75,861), Awarded.
26. MSU MAFES Strategic Research Initiative, Molecular characterization of novel antigens for the development of a universal vaccine against *Campylobacter jejuni* colonization in poultry, Role: PI (07/01/2023-06/30/2025, \$100,000), Awarded.
27. MSU MAFES Strategic Research Initiative, Source-tracking and control of spoilage bacteria in fresh pork sausage production using a culture-free and cost-effective protocol, Role: Co-PI (01/01/2023-12/31/2024, \$100,000), Awarded.
28. USDA NIFA Hatch Multi-State CRIS project MIS-322430/ NE-1942, Mechanisms and Mitigation of Bacterial Pathogens in Poultry, Role: PI (07/01/2022-06/30/2024), Awarded.
29. USDA NIFA Hatch Multi-State CRIS project MIS-322430/ NE-2442, Mechanisms and Mitigation of Bacterial Pathogens in Poultry, Role: PI (07/01/2024-06/30/2026), Awarded.
30. MSU CALS/MAFES Undergraduate Research Scholars Program, Efficiency of 405-nm LED Light for Sanitation of Hatching Eggs, Role: PI (05/15/2022-05/14/2023, \$3,000), Awarded.
31. June 2023. Mississippi Agricultural and Forestry Experiment Station \$1,500 travel grant to attend Multistate NE1942 meeting at Auburn University, Auburn, AL.
32. USDA ARS 6064-13000-013-00D, Systems approach to understanding and mitigating avian *Escherichia coli* infections and antimicrobial resistance in the poultry environment, Role: Co-PI (10/2017-9/2022, \$2,710,465), Awarded.
33. MSU MAFES Strategic Research Initiative, Development of a field-deployable quantitative detection system for *Clostridium perfringens* in poultry flocks to combat necrotic enteritis, Role: PI (01/01/2022-12/31/2022, \$49,900), Awarded.
34. MSU MAFES Strategic Research Initiative, An accurate and cost-effective culture-free sequencing technique to characterize spoilage bacteria in fresh pork breakfast sausage, Role: Co-PI (01/01/2022-12/31/2022, \$49,980), Awarded.

35. USDA NIFA Hatch CRIS project MIS-322370, Antimicrobial resistance in bacterial poultry pathogens and the mechanisms of bacterial pathogenesis, Role: PI (11/28/2018-10/14/2022), Awarded.
36. General Memorandum of Agreement with Delacon USA Inc. Evaluation of Biostrong 510 inclusion in conventional diets on Ross 708 male 56 day performance, processing, and oxidative stress, Role: Collaborator (5/26/2022-7/21/2022, total \$47,400, \$12,400 to my lab), Awarded.
37. MSU William M. White Special Project Awards, Inactivation of *Campylobacter jejuni* on broiler meat using 405 nm light and its effect on meat quality, Role: PI (04/01/2021-03/30/2023, \$2,000), Awarded.
38. MSU CALS/MAFES Undergraduate Research Scholars Program, Evaluation of fatty acid metabolism-related gene expression in broilers with woody breast myopathy, Role: PI (04/01/2021-03/30/2022, \$3,000), Awarded.
39. MSU MAFES Strategic Research Initiative, Development of a novel loop-mediated isothermal amplification assay using portable devices for the rapid detection of toxigenic *Clostridium perfringens* in the field, Role: PI (01/01/2021-12/31/2021, \$49,800), Awarded.
40. USPoultry and Egg Association #724, Comparative genomics and *in vitro* screening approach for the identification of vaccine candidates for food-borne pathogen *Campylobacter jejuni*, Role: Principal Investigator (10/2020-12/2021, \$55,000), Awarded.
41. MSU CALS/MAFES Undergraduate Research Scholars Program, Establishment of on-site diagnostic procedures for the detection of avian bacterial pathogens, Role: PI (04/01/2020-03/31/2021, \$3,000), Awarded.
42. MSU MAFES Strategic Research Initiative, Identification of vaccine candidates against *Campylobacter* using reverse vaccinology and *in vitro* screening approach, Role: PI (01/01/2020-12/31/2020, \$49,800), Awarded.
43. General Memorandum of Agreement KATACOM, LUKA405 nm light for the inactivation of avian pathogenic *E.coli* in broiler litter, Role: PI (2020, \$4,505), Awarded.
44. MSU CALS/MAFES Undergraduate Research Scholars Program, Development of a high-throughput DNA extraction method for rapid detection of pathogens in broiler farm, Role: PI (04/01/2019-03/31/2020, \$3,000), Awarded.
45. MSU MAFES Strategic Research Initiative, The prevalence of *Campylobacter* in the Mississippi poultry industry and its associated antimicrobial resistance, Role: PI (01/01/2019-12/31/2019, \$49,400), Awarded.
46. MSU MAFES Strategic Research Initiative, Characterizing the prevalence, virulence factors, and antibiotic resistance spectrum of avian pathogenic *Escherichia coli* (APEC) in the GI tract, respiratory tract, and litter materials of the commercial broiler chicken in Mississippi, Role: Co-PI (01/01/2019-12/31/2019, \$48,500), Awarded.
47. MSU MAFES Strategic Research Initiative, Alleviate woody breast disorder in broilers by improving gut health, Role: Co-PI (01/01/2019-12/31/2019, \$49,980), Awarded.

PROJECTS NOT FUNDED

1. USPoultry and Egg Association Spring 2025 Research Competition, Autonomous and Damage-free Egg Collection in Poultry Farming Using Mobile Soft Robotic Systems, Role: Co-PI (2025), Denied.
2. USDA NIFA, Developing Innovative Models for Heterogeneous Data Interoperability in Genome to Phenome Intelligence, Role: Co-PI (01/01/2025-12/31/2028, \$949,999), Denied.
3. USDA NIFA, Enhancing Agricultural Microbiomes Research Through the Acquisition of a CalScreener Isothermal Microcalorimetry System at Mississippi State University, Role: PI (09/15/2024-09/14/2028, \$151,956), Denied.
4. USPoultry and Egg Association, Development and Validation of an Argonaute-based Isothermal Amplification Assay for Specific and Rapid Detection of *Avibacterium paragallinarum* in Commercial Poultry, Role: Principal Investigator (10/01/2024-09/30/2026, \$125,000), Denied.
5. MSU CALS/MAFES Undergraduate Research Scholars Program, Enhancing Poultry Health and Food Safety Through Bacterial Serotyping, Role: PI (04/01/2024-03/31/2025, \$4,000), Denied.
6. USDA NIFA, Identification of novel antigens to facilitate the development of a universal vaccine for preventing avian colibacillosis, Role: PI (04/01/2024-03/31/2027, \$650,000), Denied.
7. USDA NIFA, Culture-free metagenomic analysis of species-level spoilage bacteria in fresh chicken breast meat, Role: Co-PD (04/01/2024-03/31/2026, \$300,000), Denied.
8. NSF. FW-HTF-RM: Human-Autonomy Teaming-Based Robotics in Support of the Future Remote Workers with Heavy and Repetitive Tasks, Role: Co-PI (10/01/2023-09/30/2026, \$639,999), Denied.
9. NCH Life Sciences, Shelf-life testing on meat cuts, Role: Co-PI (2023, \$36,000), Denied.
10. USDA NIFA, Culture-free metagenomic analysis of species-level spoilage bacteria in fresh chicken breast meat, Role: Co-PD (04/01/2023-03/31/2025, \$300,000), Denied.
11. USDA NIFA, Automatic morphological features classification and modeling of broiler chickens based on machine vision, Role: Co-PD (04/01/2023-03/31/2025, \$299,139), Denied.
12. USDA NIFA, Identification of novel antigens to facilitate the development of a universal vaccine for preventing avian colibacillosis, Role: PI (04/01/2023-03/31/2026, \$650,000), Denied.
13. USDA NIFA, Microplastics: a culprit for woody breast myopathy in broilers? Role: Co-PD (04/01/2023-03/31/2026, \$650,000), Denied.
14. USPoultry and Egg Association Spring 2023 Research Competition, Development of a field-deployable detection system for *Clostridium perfringens*, Role: PI (2023), Denied.

15. USPoultry and Egg Association Fall 2022 Research Competition, BtuB-based Immune Intervention to Control *Campylobacter jejuni* Colonization in Poultry, Role: PI (2022), Denied.
16. USPoultry and Egg Association Fall 2022 Research Competition, Development of a Poultry Monitoring and Identification System (MIS) Based on Machine Vision, Role: PI (2022), Denied.
17. MSU Advancing Collaborative Research (ACR) Program, Morphological Features Classification, Analysis and Modeling of Broiler Chickens based on Machine Vision, Role: Co-PI (2022), Denied.
18. USPoultry and Egg Association Board Research Initiative 2021, BtuB-based Vaccine for Reducing Colonization of *Campylobacter* in Poultry, Role: PI (2021), Denied.
19. USDA NIFA, Development of a field-deployable quantitative detection system for *Clostridium perfringens*, Role: PI (2021, \$299,776) Denied.
20. USDA NIFA, Metagenomic and proteomic approach to characterize woody breast myopathy in broilers and develop strategies to reduce woody breast incidence, Role: Co-PI (2021, \$624,455), Denied.
21. Foundation for Food and Agricultural Research, Developing Novel Diagnostic Tools to Control Avian Bacterial Pathogens, Role: PI (2020, \$449,138), Denied.
22. USPoultry and Egg Association 2020 Fall Competition, Constructing a recombinant probiotic bacterium as a vector for antigen delivery: A novel immunization approach against NE, Role: Co-PI (2020, \$61,446), Denied.
23. USDA NIFA, Metagenomic and proteomic approach to characterize woody breast myopathy in broilers and develop strategies to reduce woody breast incidence, Role: Co-PI (2019, \$499,997), Denied.
24. National Science Foundation, Accelerating proteomics and metabolomics research through acquisition of an Orbitrap Eclipse mass spectrometer, Role: Co-PI. (2020, \$1,261,123), Denied.
25. MAFES Strategic Research Initiative, Intervention strategies to regulate gut microbiota, lower oxidative stress, and reduce woody breast incidence in broilers, Role: Co-PI. (2020, \$50,000), Denied.
26. USPoultry and Egg Association 2019 Fall Competition, Impact of altered gut microbiota composition on woody breast development of broilers, Role: PI. (2019), Denied.

PEER-REVIEWED PUBLICATIONS (ORCID: 0000-0002-3933-5794, *corresponding author, # equal contribution)

1. Hailey Fugate, Linan Jia, Xin Ye, Manong Wang, Christopher Magee, Jeffrey D. Evans, Xue Zhang, Pratima Acharya Adhikari, Kelsy Robinson, **Li Zhang***. (2025). Assessment of *pagP* gene function in avian pathogenic *Escherichia coli* pathogenicity using a broiler chick challenge model. Poultry Science. (Under preparation)

2. Hailey Fugate, Yujie Zhang, **Li Zhang**, Yen-te Liao, Vivian C. H. Wu. (2025). Data Collection of Whole Genomes for Preparation of Groundwork and Understanding the Role of Phages in *Salmonella* Infantis Strains. (Under preparation)
3. Joshua M. Lyte, Mitiku M. Seyoum, Diana Ayala, Jannigje G. Kers, Valentina Caputi, Timothy Johnson, **Li Zhang**, Joshua Rehberger, Guolong Zhang, Sami Dridi, Brett Hale, Jean E. De Oliveira, Daniel Grum, Alexandra H. Smith, Michael Kogut, Elena G. Olson, Steven C. Ricke, Anne Ballou, Bill Potter, Monika Proszkowiec-Weglarz. (2025). A Best-practices framework for the use of 16S rRNA gene sequencing in poultry microbiota research. *Poultry Science*. (Under preparation).
4. **Li Zhang**, Satoshi Ishii, Michael J. Rothrock Jr., Adelumola Oladeinde and Xiang Li. (2025). Genomic insights into the evolution and adaptation of *Listeria monocytogenes* in poultry production systems. *Food Research International*. (Submitted, Manuscript ID: **FOODRES-D-25-16475**). Submitted on 26 November 2025.
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PEER-REVIEWED ABSTRACTS SINCE 2018 (* indicates the corresponding author)

1. Linan Jia, Xin Ye, Mark A. Arick II, Chuan-Yu Hsu, Jeffrey D. Evans, Kelsy Robinson, Pratima Adhikari, Ken Macklin, and **Li Zhang***. (2025). Pangenome analysis reveals distinct evolutionary clusters and transmission patterns of avian pathogenic *Escherichia*

coli. 2025 Poultry Science Association Annual Meeting. July 14-18, 2025. Raleigh, NC. Submitted 13 March, Accepted 23 April 2025, Published TBD.

2. Manhong Wang, Chuan-Yu Hsu, Mark A. Arick II, Xue Zhang, Pratima Acharya Adhikari, Peixin Fan, Katie Elliott, Ken Macklin and **Li Zhang***. (2025). Genomic characterization of bacterial isolates from broiler chicken cecal microbiota. 2025 Poultry Science Association Annual Meeting. July 14-18, 2025. Raleigh, NC.
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4. Charis A. Waters, Roshan Adhikari, Jason Lee, Ruben Kriseldi, Michael Elliot, **Li Zhang**, Kelley Wamsley, Pratima Adhikari. (2025). Effect of branched-chain amino acid (leucine, isoleucine and valine) interactions on performance in peak hy-line w-36 hens. 2025 Poultry Science Association Annual Meeting. July 14-18, 2025. Raleigh, NC.
5. Monzur Chowdhury, Christopher Magee, Jeffrey D. Evans, Palmy R. Jesudhasan, **Li Zhang**, and Kelsy Robinson. (2025). Evaluation of a novel electron beam-killed vaccine against avian pathogenic *Escherichia coli* in chicken. 2025 Poultry Science Association Annual Meeting. July 14-18, 2025. Raleigh, NC.
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9. Hailey Fugate, Linan Jia, Xin Ye, Xue Zhang, Ken Macklin, **Li Zhang***. (2025). Optimizing a *Campylobacter jejuni* colonization challenge model for food safety intervention assessment in broiler chickens. 2025 Reciprocal Meat Conference (RMC). June 22-25, 2025. Columbus, OH.
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23. Linan Jia, Mark A. Arick II, Chuan-Yu Hsu, Xue Zhang, Jeffrey Evans, Kelsy Robinson, Pratima Adhikari, **Li Zhang***. (2024). Selection of highly expressed vaccine candidates under host-pathogen interaction using HD 11 cell line and avian pathogenic *E. coli*. 2024 Poultry Science Association Annual Meeting. July 14-18, 2024. Louisville, KY. Submitted 18 March, Accepted 28 April 2024, Published TBD.
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25. Fozol K. Ovi, Dan Wilson, Douglas Cosby, Kelsy Robinson, Christopher Magee, Jeffrey Evans, **Li Zhang**, Pratima Adhikari. (2024). Evaluating the intra-trachea model of avian pathogenic *Escherichia coli* (APEC) infection on mortality, lesion development and coliform count in extra-intestinal tissues of Hy-Line W-36 layer pullets. 2024 Poultry Science Association Annual Meeting. July 14-18, 2024. Louisville, KY. Submitted 18 March, Accepted 28 April 2024, Published TBD.
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30. Diksha Pokhrel, Hudson T. Thames, Mark A. Arick II, Chuan-Yu Hsu, Thu Dinh, Wes Schilling, Shecoya White, Reshma Ramachandran, Anuraj Theradiyil Sukumaran, Kenneth Macklin, and **Li Zhang***. (2024). Genomic analysis of *Campylobacter jejuni* isolated from commercial broiler processing plants. 2024 International Poultry Scientific Forum. Jan 29-30, 2024. Atlanta, GA. Submitted , Accepted, Published .
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33. Xin Ye, Chuan-Yu Hsu, Linan Jia, Xue Zhang, Jeffrey Evans, **Li Zhang**, Kelsy Robinson. (2024). Temporal Expression Regulation of Proinflammatory Cytokines in Poultry Lung Tissues Following Avian Pathogenic *Escherichia coli* Infection. 2024 International Poultry Scientific Forum. Jan 29-30, 2024. Atlanta, GA. Submitted , Accepted, Published .
34. Hailey Fugate, Yujie Zhang, **Li Zhang**, Yen-te Liao, Vivian C. H. Wu. (2024). Data collection of whole genomes for preparation of groundwork and understanding the role of phages in *Salmonella* Infantis strains. 2024 International Poultry Scientific Forum. Jan 29-30, 2024. Atlanta, GA. Submitted November 15, 2023; Accepted December 15, 2023; Published January 29, 2024.
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52. Priyanka Devkota, Linan Jia, Xue Zhang, Anuraj T Sukumaran, Aaron S Kiess, Jeffrey D Evans, Reshma Ramachandran, Pratima Adhikari, **Li Zhang***. (2023). Understanding the adhesion and invasion characteristics of avian *E. coli* isolated from clinical and non-clinical samples using avian macrophages cell line HD11. 2023 International Poultry Scientific Forum. Jan 23-24, 2023. Atlanta, GA.
53. Liu Cao, Linan Jia, **Li Zhang**, Xue Zhang, M. Wes Schilling, Jun Lin. (2023). Oral administration of microplastic polystyrene increased incidence of woody breast myopathy in broilers. Conference of Research Workers in Animal Diseases (CRWAD) 2023, Abstract 77893.
54. Mary Beth Tingle, Sabin Poudel, **Li Zhang***. (2023). Investigating the effectiveness of 405 nm light in controlling the proliferation of avian pathogenic *Escherichia coli*. MSU 2023 Spring Undergraduate Research Symposium. 1st place (\$250) amongst the College of Forestry students in the Biological Sciences portion.
55. Linan Jia, Sabin Poudel, Priyanka Devkota, Mark A. Arick II, Chuan-Yu Hsu, Daniel G. Peterson, Jeffrey D. Evans, **Li Zhang***. (2022). *In silico* prediction of vaccine candidates against colibacillosis in poultry using reverse vaccinology. Poultry Science Association 111th Annual Meeting Abstracts.

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58. Deepa Chaudhary, Linan Jia, Anuraj Theradiyil Sukumaran, Wen-Hsing Cheng, Aaron S. Kiess, Chuan-Yu Hsu, **Li Zhang***. (2022). Evaluation of different DNA extraction methods for the detection of *Clostridium perfringens* by loop-mediated isothermal amplification (LAMP) assay. Poultry Science Vol. 101 (E-suppl. 1), 178. Poultry Science Association 111th Annual Meeting Abstracts. (PSA Certificate of Excellence Recipients)
59. Priyanka Devkota, Sabin Poudel, Linan Jia, Xue Zhang, Anuraj T Sukumaran, Aaron S Kiess, Jeffrey D Evans, Pratima Adhikari, **Li Zhang***. (2022). Investigation of virulence factors in avian pathogenic *Escherichia coli* isolated from asymptomatic and diseased broilers. Poultry Science Association 111th Annual Meeting. (PSA Certificate of Excellence Recipients, Won 1st place for the International Paper Scholarship, \$2,000)
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 70. Madalyn Jennings, **Li Zhang**, Pratima Adhikari, Reshma Ramachandran. (2022). Characterization of virulence-associated genes and phylogenetic groups of Avian pathogenic *Escherichia coli* isolated from broiler breeders with colibacillosis from Mississippi. *Poultry Science* Vol. 101 (E-suppl. 1), 38. 2022 International Poultry Scientific Forum (Abstract and Oral Presentation).
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 72. Sabin Poudel, Mark A. Arick II, Chuan-Yu Hsu, Wei Zhai, Anuraj T. Sukumaran, Aaron S. Kiess, **Li Zhang***. (2021). *In silico* prediction of novel vaccine candidates to reduce *Campylobacter jejuni* in chickens. *Poultry Science* Vol. 100 (E-suppl. 1), 129. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation, PSA Certificate of Excellence Recipients, International Paper Scholarship \$5,000).
 73. Linan Jia, Chuan-yu Hsu, Aaron S. Kiess, E. David Peebles, Wei Zhai, **Li Zhang***. (2021). Changes in gene expression in the intestinal mucus of broilers with woody breast myopathy. *Poultry Science* Vol. 100 (E-suppl. 1), 41. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation)
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- Vol. 100 (E-suppl. 1), 36. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation)
75. Deepa Chaudhary, Priyanka Devkota, Sabin Poudel, Linan Jia, Anuraj Theradiyil Sukumaran, Wen-Hsing Cheng, Aaron Kiess, **Li Zhang***. (2021). Molecular characterization of virulence and antimicrobial resistance genes in avian pathogenic *Escherichia coli* isolated from poultry having colibacillosis. Poultry Science Vol. 100 (E-suppl. 1), 37. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation)
 76. Mackenzie A. Ripper, Sabin Poudel, Aaron S. Kiess, **Li Zhang***. (2021). Establishing on-site diagnostic procedures for the detection of *Campylobacter jejuni* in poultry. Poultry Science Vol. 100 (E-suppl. 1), 132. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation, Student Certificates of Participation)
 77. Fozol K. Ovi, Aaron S. Kiess, **Li Zhang**, Pratima Adhikari. (2021). Prevalence of virulence and antimicrobial resistance genes in suspected APEC isolates collected from different extra-intestinal tissue of layer hen. Poultry Science Vol. 100 (E-suppl. 1), 215. 2021 Poultry Science Association Annual Meeting (Abstract and Oral Presentation, Certificate of Excellence Recipients).
 78. Sabin Poudel, Tianmin Li, Mark A. Arick II, Chuan-Yu Hsu, Aaron Kiess, **Li Zhang***. (2021). Comparative whole-genome analysis of *Campylobacter jejuni* strains isolated from retail broiler in Mississippi. Poultry Science Vol. 100 (E-suppl. 1), 23. (Abstract and Oral Presentation)
 79. Sabin Poudel, Sadie White, Tianmin Li, Xue Zhang, Aaron Kiess, **Li Zhang***. (2021). Comparison of DNA extraction methods in poultry litter and fecal samples to identify pathogenic bacteria using real-time PCR. Poultry Science Vol. 100 (E-suppl. 1), 8. 2021 International Poultry Scientific Forum (Abstract and Oral Presentation)
 80. Tianmin Li, Anuraj Theradiyil Sukumaran, Wen-Hsing Cheng, Aaron Kiess, **Li Zhang***. (2021). Phenotypic and genotypic antimicrobial resistance characteristics of avian pathogenic *Escherichia coli* isolated from broilers. Poultry Science Vol. 100 (E-suppl. 1), 41. 2021 International Poultry Scientific Forum (Abstract and Poster Presentation)
 81. Reshma Ramachandran, Chuan-Yu Hsu, Anuraj Theradiyil Sukumaran, **Li Zhang***. (2021). Validation and application of probe-based multiplex real-time PCR assays for the rapid and accurate detection of avian pathogenic *Escherichia coli*. Poultry Science Vol. 100 (E-suppl. 1), 43. 2021 International Poultry Scientific Forum (Abstract and Poster Presentation)
 82. Hudson T. Thames, Courtney A. Fancher, Mary Gates Colvin, Mika McAnally, Emily Tucker, Nikhil Nuthalapati, **Li Zhang**, Aaron Kiess, Thu T. N. Dinh, and Anuraj T. Sukumaran. (2021). Prevalence of *Salmonella*, *Campylobacter*, and spoilage bacteria on broiler meat at different stages of commercial poultry processing. Poultry Science Vol. 100 (E-suppl. 1), 4. 2021 International Poultry Scientific Forum (Abstract and Oral Presentation)
 83. Courtney A. Fancher, Hudson T. Thames, Mary Gates Colvin, **Li Zhang**, Nikhil Nuthalapati, Anuraj T. Sukumaran. (2021). Prevalence of *Clostridium perfringens* in no

- antibiotics ever broiler farms in Mississippi. Poultry Science Vol. 100 (E-suppl. 1), 8. 2021 International Poultry Scientific Forum (Abstract and Oral Presentation)
84. Mackenzie Ripper, Sabin Poudel, Aaron Kiess, and **Li Zhang***. (2021). Evaluating the loop-mediated isothermal amplification (LAMP) assay for the rapid detection of *Campylobacter jejuni* in poultry. 2021 Spring Undergraduate Research Symposium. Mississippi State, Mississippi.
 85. Madalyn Jennings, **Li Zhang**, Pratima Adhikari, Reshma Ramachandran. (2021). Evaluation of antibiotic resistance pattern of Avian Pathogenic *Escherichia coli* isolated from broiler breeders with colibacillosis from Mississippi. 2021 Summer Undergraduate Research Symposium. Mississippi State, Mississippi.
 86. Emily Tucker, Hudson Thames, **Li Zhang**, Aaron Kiess, and Thu T. N. Dinh, Anuraj T. Sukumaran. (2021). Efficacy of Peracetic Acid and Cetylpyridinium Chloride against *Salmonella* Reading in vitro and on Turkey Carcasses. 2021 Summer Undergraduate Research Symposium. Mississippi State, Mississippi.
 87. Tianmin Li, Claudia Castañeda, Mark A. Arick II, Chuan-Yu Hsu, Aaron Kiess, **Li Zhang***. (2020). Whole-genome sequence analysis of multidrug-resistant avian pathogenic *Escherichia coli* (APEC) MS1170 isolated from broiler. Poultry Science Vol. 99 (E-suppl. 1), 122. (Abstract and Poster Presentation)
 88. Reshma Ramachandran, Chuan-Yu Hsu, **Li Zhang***. (2020). Development of probe-based multiplex real-time PCR assays for the rapid and accurate detection of avian pathogenic *Escherichia coli*. Poultry Science Vol. 99 (E-suppl. 1), 125. (Abstract and Oral Presentation)
 89. Isha Poudel, Nikhil Nuthalapati, **Li Zhang**, Mary Beck, Aaron Kiess, Pratima Adhikari. (2020). Prevalence of avian pathogenic *Escherichia coli* in cage-free W-36 pullets reared under monochromatic blue and normal LED lights. Poultry Science Vol. 99 (E-suppl. 1), 53. (Abstract and Poster Presentation)
 90. Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaid, **Li Zhang**, E. David Peebles. (2020). Effects of the *in ovo* injection of vitamin D3 and 25-hydroxyvitamin D3 on the vitamin D3 activity-related gene expression of broilers challenged with coccidiosis. Poultry Science Vol. 99 (E-suppl. 1), 115.
 91. Saman Fatemi, Katie E. Elliott, Abdul Mohssen Alqhtani, Ayoub Mousstaid, **Li Zhang**, E. David Peebles. (2020). Effects of the *in ovo* injection of vitamin D3 and 25-hydroxyvitamin D3 on the immune-related gene expression of broilers challenged with coccidiosis. Poultry Science Vol. 99 (E-suppl. 1), 116.
 92. Tianmin Li, Sadie White, Nikhil Nuthalapati, Anuraj Sukumaran, Aaron Kiess, **Li Zhang***. (2020). The prevalence and antimicrobial resistance properties of *Campylobacter* in Mississippi poultry. Poultry Science Vol. 99 (E-suppl. 1), 37. (Abstract and Oral Presentation)
 93. Sadie White, Tianmin Li, Sabin Poudel, Aaron Kiess, **Li Zhang***. (2020). Comparison of four bacterial DNA extraction methods in poultry litter and fecal samples. Poultry Science Vol. 99 (E-suppl. 1), 37. (Abstract and Oral Presentation, Student Certificates of Participation)

94. Tomi Obe, Rama Nannapaneni, Wes Schilling, **Li Zhang**, Aaron Kiess. (2020). Mode of persistence and antibiotic resistance of *Salmonella* isolates from poultry processing equipment. Poultry Science Vol. 99 (E-suppl. 1), 6. (Abstract and Oral Presentation)
95. Courtney Fancher, Hudson Thames, Alyssa Easterling, Alexis Dillender, Nikhil Nuthalapathi, **Li Zhang**, Aaron Kiess, Thu Dinh, Anuraj Sukumaran. (2020). Influence of season and age of flock on the virulence gene profiles of *Escherichia coli* isolates from ‘no antibiotics ever’ commercial broiler farms and their antibiotic susceptibility. Poultry Science Vol. 99 (E-suppl. 1), 46. (Abstract and Oral Presentation)
96. Milan Sharma, **Li Zhang**, Aaron Kiess, Pratima Adhikari (2020). Housing environment and laying hen strain impacts on cloacal microbiology and incidence of avian pathogenic *Escherichia coli* (APEC) in the late phase of production. Poultry Science Vol. 99 (E-suppl. 1), 80. (Abstract and Oral Presentation)
97. Castañeda, C.D., **L. Zhang**, K.G.S. Wamsley, C.D. McDaniel, M.M. Beck, A.S. Kiess, “Evaluating the impact of *in ovo* injected *Lactobacillus* on broiler well being.” at 26th World Poultry Congress, Paris, France in August 2020.
98. Huiwen Wang, Ximin Zeng, **Li Zhang**, Jun Lin. “Isolation and characterization of the emerging pathogen *Escherichia albertii* in the broilers in Mississippi and Alabama.” At Conference of Research Workers in Animal Diseases (CRWAD) 2020, Online in Dec 2020. (Conference Proceedings and Oral Presentation)
99. Tianmn Li, Claudia Castañeda, Julio Miotto, Chris McDaniel, Aaron Kiess and **Li Zhang***. (2019). Effects of *in ovo* administration on the incidence of avian pathogenic *Escherichia coli* (APEC) in broilers and an evaluation on the virulence and antimicrobial resistance properties of APEC. Poultry Science. Vol. 98 (E-Suppl. 1), 42. (Abstract and Oral Presentation, International Paper Scholarship \$2,000)
100. Claudia Castañeda, Julio Miotto, **Li Zhang**, Kelley Wamsley, Christopher McDaniel, and Aaron Kiess. (2019). Impact of *in ovo* injected *Lactobacillus* species on hatchability, growth performance and broiler immune status. Poultry Science. Vol. 98 (E-Suppl. 1), 18. (Abstract and Oral Presentation)
101. Mercedes Smith, Alyssa Easterling, Nikhil Nuthalapathi, **Li Zhang**, Aaron Kiess and Anuraj Theradiyil Sukumaran. (2019). Prevalence of plasmid carried virulence genes by *Escherichia coli* isolates from litter, feces, and cloacal and tracheal swabs collected from “no antibiotics ever” commercial farms. Poultry Science. Vol. 98 (E-Suppl. 1), 44. (Abstract and Oral Presentation)
102. Xue Zhang, **Li Zhang**, Jasmine D. Hendrix, Wei Zhai, M. W. Schilling. 2019. Characterization of caecal microbiota in broilers that differ in genetic strain, nutrition, and development of woody breast. Meat and Muscle Biology 3(2), 72. (Abstract and Oral Presentation)
103. Tianmn Li, Claudia Castañeda, Julio Miotto, Chris McDaniel, Aaron Kiess and **Li Zhang***. 2019. Effects of *in ovo* administration on the incidence of avian pathogenic *Escherichia coli* (APEC) in broilers and an evaluation on the virulence and antimicrobial resistance properties of APEC. Mississippi Academy of Science third annual summer student science symposium, July 11, Mississippi State, Mississippi. P3.

104. Mercedes Smith, Alyssa Easterling, Nikhil Nuthalapathi, **Li Zhang**, Aaron Kiess and Anuraj Theradiyil Sukumaran. 2019. Prevalence of plasmid carried virulence genes by *Escherichia coli* isolates from litter, feces, and cloacal and tracheal swabs collected from “no antibiotics ever” commercial farms. Mississippi Academy of Science third annual summer student science symposium, July 11, Mississippi State, Mississippi. P3.
105. **Li Zhang**, Cheng WH. 2018. Increased Genome Instability and Oxidative Stress in Selenoprotein H Knockout HeLa Cells. Nutrition 2018 American Society for Nutrition’s Annual Meeting, Boston, MA in June 2018. Abstract 420225. (Abstract and Oral Presentation)
106. Cheng WH., Cao L, Lu HY, **Li Zhang**. 2018. Sexual Dimorphisms in the Effect of Dietary Selenium Deficiency and Age on Selenium Status, Selenotranscriptomes, and Gut Microbiota in Mice. Nutrition 2018 American Society for Nutrition’s Annual Meeting, Boston, MA in June 2018. (Abstract and Oral Presentation)

BOOK AND BOOK CHAPTERS

1. Tingjun Lei, Timothy Sellers, Chaomin Luo, and **Li Zhang** (2022). A Bio-Inspired Neural Network Approach to Robot Navigation and Mapping with Nature-Inspired Algorithms. In: Tan, Y., Shi, Y., Niu, B. (eds) Advances in Swarm Intelligence. ICSI 2022. Lecture Notes in Computer Science, vol 13345. Springer, Cham.
https://doi.org/10.1007/978-3-031-09726-3_1
2. Yang Z., **Zhang L.**, Li S., Ma J. New Technologies for Dairy Processing. China Agriculture Press, Inc. Beijing, China, 2012.
3. Zeng S. S., **Zhang L.**, G. R. Wiggans, J. Clay, R. LaCroix, J. Z. Wang, and T. Gipson. Current status of composition and somatic cell count in milk of goats enrolled in Dairy Herd Improvement Program in the United States. In: New Research on Livestock Science and Dairy Farming. Nova Science Publishers, Inc. Hauppauge, NY, 2009.

INVITED PRESENTATION:

1. **Li Zhang**. 2025. MPA Poultry Health Seminar. Identification of novel antigens for a universal vaccine against avian colibacillosis. Jackson, MS on Feb 19, 2025.
2. **Li Zhang**. 2023. IPPE Research TECHTalk. Use of comparative genomics and *in vitro* screening approach for the identification of vaccine candidates for food-borne pathogen *Campylobacter jejuni*. Atlanta, GA on January 26, 2023.
https://www.youtube.com/watch?v=FwahGK2_lxo&t=32s

POPULAR PRESS:

1. TheMicrobiologist. AMI members develop rapid test for bacterium that costs poultry industry billions globally. April 6, 2025. <https://www.the-microbiologist.com/news/ami-members-develop-rapid-test-for-bacterium-that-costs-poultry-industry-billions-globally/5598.article>

2. USPOULTRY 2024 Research Newsletter. Research Shows Vertical Transmission of *Salmonella* Reading in Breeders (729). Page 2.
<https://www.uspoultry.org/files/USPOULTRY2024-ResearchEdition.pdf>
3. USPOULTRY News & Views. Identifying Vaccine Candidate for *Campylobacter jejuni*: Enhancing Food Safety to Feed the World's Growing Population. July/August 2020. Page 10. <https://www.uspoultry.org/media-center/newsletters/>
4. WATTPoultry.com. Enhancing food safety to feed the world's growing population. July 2nd, 2020. <https://www.wattagnet.com/home/article/15531393/enhancing-food-safety-to-feed-the-worlds-growing-population-wattagnet>
5. Meatingplace. 2022. PROCESSING TECHNOLOGY. USPOULTRY Exclusive: A novel approach to identifying *Campylobacter jejuni* vaccine candidates.
<https://www.meatingplace.com/Industry/TechnicalArticles/Details/104203>

AWARDS:

1. June 2025. Nominated and elected as Senior Executive of the NE 2441 Multi-State.
2. February 2025. Nominated for MAFES Excellence in Research Awards.
3. June 2024. Nominated and elected as Junior Executive of the NE 2441 Multi-State.
4. June 2023. Nominated and elected as Secretary of the NE 1941 Multi-State.
5. June 2023. Mississippi Agricultural and Forestry Experiment Station \$1,500 travel grant to attend Multistate NE1942 meeting at Auburn University, Auburn, AL.
6. February 2023. Nominated for MAFES Excellence in Research Awards.
7. February 2023. Nominated for the MAFES Outstanding Publication Award.
8. September 2022. Nominated ORED emerging research scholar award.
9. William M. White Special Project Award, 2021. Mississippi State University. Division of Agriculture, Forestry and Veterinary Medicine.
10. May 2020. Nominated 2020 New Innovator in Food and Agriculture Research Award.

PATENT

1. Yang Z., **Zhang L.**, Wang J., Jiang Y., Li Y., 2012. Recombinant expression of bovine chymosin in *Pichia pastoris*. CN 101748077 B (China)

SERVICE – PROFESSIONAL

1. Poultry Science Journal section editor, 2025-now.
2. June 2025, Elected as Senior Executive of the NE2442 Multistate group.
3. Junior Executive for Multistate NE2442, 2025

4. Secretary for Multistate NE1942, 2024
5. Poultry Science Annual Meeting
 - Review abstracts (2023)
 - Student competition judge (2019, 2021, 2022)
6. International Poultry Scientific Forum
 - Session moderator (2020, 2022)
 - Review abstracts (2020)
 - Student competition judge (2021, 2023, 2024, 2025)
7. Mississippi Academy of Science Symposium
 - Scientific committee, Summer Science & Engineering Symposium (2019, 2022)
 - Student competition judge, Summer Science & Engineering Symposium (2019, 2022)
8. MSU Student Science Symposium
 - Student competition judge, Graduate Research Symposium (Spring 2021, Fall 2021, Spring 2022, Fall 2022)
 - Symposium Evaluator, Undergraduate Research Symposium (Spring 2023)
9. Memberships in professional societies
 - Poultry Science Association (PSA), 2018-present
 - Mississippi Poultry Association (MPA), 2018-present
 - Southern Poultry Science Society (SPSS), 2018-present
 - American Society for Nutrition (ASN), 2018-present
 - American Society for Microbiology (ASM), 2021-present
10. Ad Hoc Reviewer: *Animal Health Research Reviews* (2 manuscripts), *Bio-protocol* (1 manuscript), *Current Microbiology* (1 manuscript), *Experimental Gerontology* (1 manuscript), *Food Science & Nutrition* (8 manuscripts), *Foods* (1 manuscript), *International Journal of Poultry Science* (1 manuscript), *Journal of Applied Poultry Research* (1 manuscript), *Journal of Global Antimicrobial Resistance* (1 manuscript), *Microbiology Spectrum* (2 manuscripts), *PlosOne* (1 manuscript), *Poultry Science* (18 manuscripts), *Probiotics and Antimicrobial Proteins* (2 manuscripts), *Zoonoses and Public Health* (1 manuscript)

SERVICE – UNIVERSITY

1. Departmental ABSL2 farm facility supervisor.
2. Departmental faculty representative to MSU library.
3. Departmental building committee chair.

4. Departmental: I served as a faculty search committee member in 2022, and search committee chair in 2024.
5. Departmental: I supervise one Postdoc and one research associate.
6. Departmental: As a molecular biologist, I give unstintingly to others in the department and teach our graduate students laboratory techniques. I also assisted with processing, feather sexing bird, sample collection for the research project of our department.