Zhen Jia

EDUCATION

Ph. D. ***Food Science and Engineering***
Fujian Agriculture and Forestry University, Fujian, China
M. S. ***Food Science and Engineering***
Fujian Agriculture and Forestry University, Fujian, China
B. S. ***Food Safety and Quality***
Qilu University of Technology, Shandong, China

PROFESSIONAL EXPERIENCES

Assistant research professor, *Auburn University* *2025-present*

Postdoctoral Research Associate, *University of Florida* *2022-2024*

Postdoctoral Research Associate, *University of Massachusetts, Lowell* *2019-2022*

Visiting Scientist, *United States Department of Agriculture* *2018-2019*

Technical Specialist, *Fu Jian Hai Yi Foodstuff Drink Co., Ltd., China* *2014-2015*

Visiting Scientist, *United States Department of Agriculture* *2013-2014*

TEACHING EXPERIENCES

University of Florida **Teaching Assistant** *2024 Spring*
Course: Advanced Food Microbiology, FOS 6226C *Graduate*

University of Florida **Facilitator** *2023 Fall*
Course: Food Safety and Sanitization, FOS 4202 *Undergraduate &Graduate*

University of Florida **Co-instructor** *2022 Spring*
Course: Advanced Food Microbiology, FOS 6226C *Graduate*

Fuzhou Liming Vocational & Technical College **Lecturer** *2015 Fall*
Course: Food Processing, FS 2123C *Undergraduate*

Fujian Agriculture and Forestry University **Teaching Assistant** *2012 Fall*
Course: Principles of Food Processing, FS 2007C *Undergraduate*

GRANTS

1. *U.S. Agency for International Development (USAID)* (2023). "Developing testing standards for lipid-based nutritional supplementary foods (LNS) key performance indicators", $30,000, Co-I.
2. *US Army DEVCOM* (Grant # S51310047977CF1, 2020-2022). "AI-enabled nondestructive surveillance of foodborne pathogen". Co-I.

PUBLICATIONS

* *Corresponding Author*.

https://scholar.google.com/citations?user=au0QYwgAAAAJ&hl=en&oi=ao

1. **Jia, Z**., Luo, Y., Wang, D., Holliday, E., Sharma, A., Green, M., Roche, M., Thompson-Witrick, K. A., Flock, G., Pearlstein, A. J., Yu, H., Zhang, B. (2024) Surveillance of pathogenic bacteria on a food matrix using machine-learning-enabled paper chromogenic arrays. *Biosensor & Bioelectronics*, 248, 115999.
2. **Jia, Z**., Lin, Z., Luo, Y., Cardoso, Z., Wang, D., Flock, G., Yu, H., Zhang, B (2024). Enhancing pathogen identification in cheese with high background microflora using machine learning-enabled paper chromogenic array. *Sensors and Actuators B: Chemical*,410, 135675
3. Gu, T., Luo Y., **Jia, Z.**, Meesrison, A., Lin, S., Ventresca, I. J., Brooks, S. J., Sharma, A., Sriram, S., Yang. M., Pearlstein, A. J., Millner, P. D., Schneider, K. R., Zhang, B. (2024). Surface topography and chemistry of food contact substances, and microbial nutrition affect pathogen persistence and symbiosis in cocktail *Listeria monocytogenes* biofilms. *Food Control*, 161, 110391.
4. Nemenyi, J., Pitts, E. R., Martin-Ryals, A., Boz, Z., Zhang, B., **Jia, Z.,** Budner, D., MacIntosh, A. J., Thompson-Witrick, K. A. (2024). The effect of mixed culture fermentation of *Saccharomyces cerevisiae* and *Saccharomyces cerevisiae* var . *diastaticus* on fermentation parameters and flavor profile. *Journal of Food Science*, 89, 513-522.
5. Cárdenas-Pinto, S., Gazaleh, J. E., Budner, D., Keene, S., Dhoble, L. R., Sharma, A., Pearson, B., **Jia, Z.,** Zhang, B., Thompson-Witrick, K. A. (2024) Influence of ethanol concentration on the extraction of cannabinoid and volatile compounds for dry-hemped beer. *Beverages*, 10 (3), 65.
6. Mendoza, P. Z., Thompson-Witrick, K. A., Moreno, S. R., Pinto, S. C., **Jia, Z**., Zotarelli, L., Zhang, B., MacIntosh, A. J. (2024) Brewing beer in microgravity: The effect on rate, yeast, and volatile compounds. *Beverages*, 10, 47.
7. **Jia, Z.**, Zhang, B., Arnav Sharma, A., Kim, N. S., Purohit, S. M., Green, M., Roche, M., Holliday, E., Chen, H. (2023). Revelation of the sciences of traditional foods. *Food Control*, 145, 109392.
8. **Jia**, **Z. *** (2022). Antifouling strategies-interference with bacterial adhesion. Bacterial biofilms, edited by Dr. Theerthankar Das, *IntechOpen*. DOI: 10.5772/intechopen.102965. (***Invited book chapter***)

9. Liu, Q., Xin, D., Xi, L., Gu, T., **Jia, Z.,** Zhang, B., Kou, L. (2022). Novel applications of exogenous melatonin on cold stress mitigation in postharvest cucumbers. *Journal of Agriculture and Food Research,* 10, 100459.
10. Yang, M., Luo, Y., Sharma, A., **Jia, Z.,** Wang, S., Wang, D., Lin, S., Perreault, W., Purohit, S., Gu, T., Dillow, H., Liu, X., Yu, H., Zhang, B. (2022). Nondestructive and multiplex differentiation of pathogenic microorganisms from spoilage microflora on seafood using paper chromogenic array and neural network. *Food Research International*,162, 112052.
11. Wang, D., Fan, F. L., Hou, B. J., Zhang, H., **Jia, Z.**, Zhang, B., Lai, R., Yu, H., Wang, F. (2022). Manifoldron: Direct space partition via manifold discovery. *IEEE Transactions on Neural Networks and Learning Systems*. arXiv:2201.05279.
12. Huang, L., Hwang, C., Liu, Y., Renye, J., **Jia, Z.** (2022). Growth competition between lactic acid bacteria and *Listeria monocytogenes* during simultaneous fermentation and drying of meat sausages - A mathematical modeling. *Food Research International*, 158, 111553.
13. Wei, Q., Pan, X., **Jia, Z. ***, Li, C., Chen, B., Fang, T., Jiang, Y. (2022). Comparative study of Ɛ-polylysine or nisin inhibition kinetics of *Lactococcus lactis* and spoilage microorganisms in fresh *Flammulina velutipes* fruiting bodies. *Journal of Food Quality*, 2022, 1-12.
14. Huang, L., **Jia, Z.**, Hwang, C. (2022). Growth and no-growth boundary of *Listeria monocytogenes* in beef - A logistic modeling. *Food Research International*, 152, 110919.
15. **Jia, Z.**, Luo, Y., Pearlstein, A., Wang, D., Sharma, A., Lin S., Block, E., Yang, M., Gu, T., Yu, H., Zhang, B. (2021). Nondestructive multiplex detection of foodborne pathogens with background microflora and symbiosis using a paper chromogenic array and advanced neural network. *Biosensors & Bioelectronics*, 183, 113209. (Impact factor: 12.545)
16. **Jia, Z.**, Huang, L., Wei, Z., Yao, Y., Fang, T., Li, C. (2021). Dynamic kinetic analysis of growth of *Listeria monocytogenes* in pasteurized cow milk. *Journal of Dairy Science*, 104 (3), 2654-2667.
17. Gu, T., Meesrisom, A., Luo, Y., Dinh, Q. N., Lin, S., Yang, M., Sharma, A., Tang, R., Zhang, J., **Jia, Z.***, Millner, P. M., Pearlstein, A. J., Zhang, B. (2021). *Listeria monocytogenes* biofilm formation as affected by stainless steel surface topography and coating composition. *Food Control*, 130, 108275.
18. Wei, Q., Pan, X., Li, J., **Jia, Z.***, Fang, T., Jiang, Y. (2021). Isolation and molecular identification of the native microflora on *Flammulina velutipes* fruiting bodies and modeling the growth of dominant microbiota (*Lactococcus lactis*). *Frontiers in Microbiology*, 12, 664874.
19. Yang, M., Liu, X., Luo, Y., Pearlstein, A., Wang, S., Dillow, H., Reed, K., **Jia, Z.**, Sharma, A., Zhou, B., Pearlstein, D., Yu, H., Zhang, B. (2021). Machine learning-enabled non-destructive paper chromogenic array detection of multiplexed viable pathogens on food. *Nature Food*, 2, 110-117.

20. Fleming, E., **Jia, Z.**, Yang, M., Hu, Q., Xue, J., Zhang, B., Luo, Y. (2021). Mucoadhesive biopolymer nanoparticles for encapsulation of lipophilic nutrients with enhanced bioactivity. *Food Biophysics*, 16, 520-531.
21. Wang, Y., Zhang, B., Dodiuk, H., Kenig, S., Barry, C., Ross, J. A., Mead, J., **Jia, Z.**, Kaynar, S., Zhang, J. (2021). Effect of protein adsorption on air plastron behavior of a superhydrophobic surface. *ACS Applied Materials & Interfaces*, 13 (48), 58096-58103.
22. **Jia, Z.**, Bai, W., Li, X., Fang, T., Li, C. (2020). Assessing the growth of *Listeria monocytogenes* in salmon with or without the competition of background microflora-A one-step kinetic analysis. *Food Control*, 114, 107139.
23. **Jia, Z.**, Peng, Y., Yan,X., Zhang, Z., Fang, T., Li, C. (2020). One-step kinetic analysis of competitive growth of *Salmonella spp.* and background flora in ground chicken. *Food Control*, 10, 107103.
24. **Jia, Z.**, Liu, Y., Hwang, C., Huang, L. (2020). Effect of combination of oxyrase and sodium thioglycolate on growth of *Clostridium perfringens* from spores under aerobic incubation. *Food Microbiology*, 89, 103413.
25. **Jia, Z.**, Liu, B., Fang, T., Chen, J., Li, C. (2020). Comparison of mass and heat transfer properties of kelp when dried by radiation or conduction using a novel superheated steam system with built-in heat recovery unit. *Drying Technology*, 38 (9), 1207-1217.
26. Liu, B., **Jia, Z.**, Li, C., Chen, J., Fang, T. (2020). Hypolipidemic and anti-atherogenic activities of crude polysaccharides from abalone viscera. *Food Science and Nutrition*, 8, 2524-2534.
27. **Jia, Z.**, Li, C., Fang, T., Chen, J. (2019). Predictive modeling of the effect of ε-polylysine hydrochloride on growth and thermal inactivation of *Listeria monocytogenes* in fish balls. *Journal of Food Science*, 84(1), 127-132.
28. **Jia, Z.**, Liu, B., Li, C., Fang, T., Chen, J. (2018). A newly designed superheated steam dryer bearing heat recovery unit: analysis of energy efficiency and kinetics of kelp drying. *Drying Technology*, 36(13), 1619-1630.
29. Chen, L., Teng, H., **Jia, Z.**, Battino, M., Miron,A., Yu, Z., Cao, H., Xiao, J. (2018). Intracellular signaling pathways of inflammation modulated by dietary flavonoids: The most recent evidence. *Critical Reviews in Food Science and Nutrition*, 58, 2908-2924.
30. Li, C., **Jia, Z.**, Bai, W., Fang, T., Chen, J. (2018). Numerical simulation of lethality of *Listeria monocytogenes* during pasteurization of canned salmon roe. *Journal of Chinese Institute of Food Science and Technology (China)*, 184-192.
31. Bai, W., Li, C., **Jia, Z.**, Peng, Y., Fang, T., Chen, J. (2018). Study on growth kinetics of *Listeria monocytogenes* in fresh-cut yacon. *Food Industry (China)*, 2, 202-206.
32. Li, C., Bai, W., **Jia, Z.**, Fang, T., Chen, J. (2018). Effect of temperature and salt on thermal inactivation of *Listeria monocytogenes*. *Food Industry (China)*, 39(12), 50-53.
33. **Jia, Z.**, Luo, Z., Fang, T., Li, C., Chen, J. (2017). Influence of drying methods on quality properties of abalone. *Food Industry (China)*, 38(6), 51-55.

34. Li, M., Liu, D., **Jia, Z.**, Chen, X., Fang, T., Chen, J. (2016). Characteristics of endogenous proteases from abalone (*Haliotis Discus Hannai Ino*) viscera. *Science and Technology of Food Industry (China)*, 37(19), 81-85.

CONFERENCE PRESENTATIONS

Oral presentation

1. **Jia, Z.** (October 2024). Surveillance of pathogenic bacteria on a food matrix using machine-learning-enabled paper chromogenic arrays. SciX Annual Conference, Raleigh, NC, US. (Invite presentation)
2. **Jia, Z.** (August 2021). Nondestructive multiplex detection of foodborne pathogens with background microflora and symbiosis using a paper chromogenic array and advanced neural network. American Chemical Society (ACS) Annual meeting.

Poster presentation

1. **Jia, Z.** (July 2024). Surveillance of pathogenic bacteria on a food matrix using machine-learning-enabled paper chromogenic arrays. International Association for Food Protection (IAFP) Annual Meeting, Long Beach, CA, US.
2. **Jia**, Z., Luo, Y., Zhang, B. (November 2023). Nondestructive multiplex detection of pathogens with background microflora and symbiosis using a paper chromogenic array and advanced neural network. Academy of Science, Engineering & Medicine of Florida (ASEMFL) Annual Meeting, Orlando, FL.
3. **Jia**, Z., Luo, Y., Zhang, B. (October 2023). Nondestructive multiplex detection of pathogens with background microflora and symbiosis using a paper chromogenic array and advanced neural network. Artificial Intelligence Days at University of Florida, Orlando, FL.
4. **Jia**, Z., Luo, Y., Zhang, B. (July 2023). Nondestructive multiplex detection of pathogens with background microflora and symbiosis using a paper chromogenic array and advanced neural network. Institute of Food Technologists (IFT) Annual Meeting, Chicago, IL.
5. **Jia, Z**. (July 2021). Assessing the growth of *Listeria monocytogenes* in salmon with or without the competition of background microflora - A one-step kinetic analysis. International Association for Food Protection (IAFP) Annual Meeting, Phoenix, AZ.
6. **Jia, Z**. (July 2018) Predictive modeling of the effect of ε-polylysine hydrochloride on growth and thermal inactivation of *Listeria monocytogenes* in fish balls. International Association for Food Protection (IAFP) Annual Meeting, Salt Lake City, UT.

PATENTS

1. **Jia, Z**. Chen, C., Fang, T., Li, C., (2016). A method for preparing abalone viscera polysaccharides powder that removes protein and heavy metals. *Chinese invention patent, Publication No.CN 105732837 B, Publication Date: 02/06/2018*.
2. Chen, C., Fang, T., Chen, M., Chen, R., **Jia, Z**. (2014). Novel suspension type freeze concentration equipment. *Chinese invention patent, Publication No.CN 103405942B, Publication Date: 12/10/2014*.

SERVICES

- **Journal reviewer**

Food Control
Food Microbiology
Frontiers in Microbiology
Frontiers in Nutrition
Journal of Food Science and Engineering
Food Science & Nutrition
Drying Technology
Open Veterinary Journal
Journal of Food Protection
Food Science and Engineering
Food Bioscience

- **Review Editor** (Editorial Board Member)

Food Control
Journal of Food Protection
Frontiers in Microbiology
Food Science and Engineering