

Changqing Wu

Department of Animal and Food Sciences
University of Delaware Newark, Delaware 19716-2150
Phone: (302) 831-3029 Fax: (302) 831-2822
Email: changwu@udel.edu

Education

B. S. 1997	Agricultural Product Processing	Zhejiang Agricultural University
M. S. 2000	Food Science	Zhejiang University
Ph. D. 2005	Food Technology	Clemson University

Professional Experience

Associate Professor, Department of Animal and Food Sciences, University of Delaware, 2015-present,
Affiliated Faculty Member, Center for Bioinformatics and Computational Biology, University of Delaware, Newark, DE 2019- present,
Assistant Professor, Department of Animal and Food Sciences, University of Delaware, 2008-2015,
Research Specialist II, Department of Animal & Veterinary Science, Clemson University, 2006-2008,
Postdoctoral Fellow, Department of Food Science and Human Nutrition, Clemson University, 2005- 2006,
Research Assistant, Department of Food Science and Human Nutrition, Clemson University, 2005- 2006,
Assistant Professor, Department of Food Science and Technology Zhejiang University of Technology, Hangzhou, Zhejiang, P.R. China, 2000-2002,

Select Publications in Refereed Journals (corresponding author followed by an asterisk*)

1. Peng, Y., Nicastro, K.H., Epps, III, T.H., **Wu, C***. (2021) Methoxy Groups Reduced the Estrogenic Activity of Lignin-Derivable Replacements Relative to Bisphenol A and Bisphenol F through Two in vitro Assays. *Food Chemistry*, 338, 127656. <https://doi.org/10.1016/j.foodchem.2020.127656>.
2. Reyes, D., Annis, S., Rivera, S., Leon-Tinoco, A., **Wu, C.**, Perkins, L., Perry, J., Ma, Z., Knight, C., Castillo, M., Romero, J. (2020) In vitro Screening of Technical Lignins to Determine Their Potential as Hay Preservatives. *Journal of Dairy Science*, 7, 6114-6134
3. Ebikade, E., Athaley, A., Fisher, B., Yang, K., **Wu, C.**, Ierapetritou, M. G., Vlachos, D. G. The Future Is Garbage: Repurposing of Food Waste to an Integrated Biorefinery (2020). *ACS Sustainable Chemistry & Engineering*, 8, 22, 8124-8136.
4. Muncke, J., Andersson, A., Backhaus, T., etc, **Wu, C.**, Zoeller, R., Scheringer, M. (2020) Impacts of Food Contact Chemicals on Human Health: A Consensus Statement. *Environmental Health*, 19, 25. <https://doi.org/10.1186/s12940-020-0572-5>.
5. Yang, K., Yang, Z., Wu, W., Gao, Ho., Zhou, C., Sun, P., **Wu, C.**, Xia, Q., Chen, J. (2020) Physicochemical Properties Improvement and Structural Changes of Bamboo Shoots (*Phyllostachys praecox* f. *Prevernalis*) Dietary Fiber Modified by Subcritical Water and High

Pressure Homogenization: A Comparative Study. *Journal of Food Science and Technology*, <https://doi.org/10.1007/s13197-020-04398-2>.

6. Peng, Y., Wang, J., **Wu, C***. (2019). Determination of Endocrine Disruption Potential of Bisphenol A Alternatives in Food Contact Materials Using In Vitro Assays: State of the Art and Future Challenges. *Journal of Agricultural and Food Chemistry*, 67, 12613-12625.
7. Yang, K., Zhou, C., Yang, Z., Yu, L., Cai, M., Wu, C., Sun, P. (2019). Establishing a Method of HPLC involving Pre-column Derivatization by 2, 2'-Dithiobis (5-nitropyridine) to Determine the Sulfites in Shrimps in Comparison to Ion Chromatography. *Food Science and Nutrition*, 7, 2151-2158.
8. Peng, Y., Nicastro, K.H., Epps, T., **Wu, C***. (2018) Evaluation of Estrogenic Activity of Novel Bisphenol A Alternatives, Four Bioinspired Bisguaiacol F Specimens, by in Vitro Assays. *Journal of Agricultural and Food Chemistry* 66, 11775-11783.
9. Shao, L., Chen, H., Hicks, D., **Wu, C***. (2018) Thermal inactivation of human norovirus surrogates in oyster homogenate. *International Journal of Food Microbiology* 281, 47-53.
10. Guo, M., Jin, T., Nghiem, N.P. Fan, X., Qi, P., Jang, C., Shao, L., **Wu, C***. (2017) Assessment of Antioxidant and Antimicrobial Properties of Lignin from Corn Stover Residue Pretreated with Low-Moisture Anhydrous Ammonia and Enzymatic Hydrolysis Process. *Applied Biochemistry Biotechnology*, 184(1):350-365
11. Xu, W., **Wu, C***. (2016) The Impact of Pulsed Light on Decontamination, Quality, and Bacterial Attachment of Fresh Raspberries. *Food Microbiology*, 57, 135-143
12. Xu, W., Chen, H., **Wu, C***. (2016). *Salmonella* and *Escherichia coli* O157:H7 Inactivation, Color, and Bioactive Compounds Enhancement on Raspberries during Frozen Storage after Decontamination Using New Formula Sanitizer Washing or Pulsed Light. *Journal of Food Protection*, 79, 1107-1114
13. Lingham, T., Mu, Ye., Chen, H., **Wu, C.** Ozbay, G., (2016) Effects of High Hydrostatic Pressure on the Physical, Microbial, and Chemical Attributes of Oysters (*Crassostrea virginica*). *Journal of Food Science*. 81, M1158-66
14. Xu, W., Chen, H., **Wu, C***. (2015) Application of Pulsed Light (PL)-Surfactant Combination on Inactivation of *Salmonella* and Apparent Quality of Green Onions. *LWT - Food Science and Technology* 61, 596–601.
15. Sims-Mourtada, J., Opdenaker, L.M., Davis, J., **Wu, C.** (2015) Long Term, Low Dose Genistein decreases Stem Cell Populations and Sensitizes Inflammatory Breast Cancer Cell Lines to Radiation. *Cancer Studies and Molecular Medicine Open Journal* 2, 60-65.
16. Xu, W., **Wu, C***. (2014) Decontamination of *Salmonella enterica* Typhimurium on green onions using new formula of sanitizer washing and pulsed UV light (PL). *Food Research International* 62, 280-285.
17. Xu, W., **Wu, C***. (2014) Different Efficiency of Ozonated Water Washing to Inactivate *Salmonella enterica* Typhimurium on Green Onions, Grape Tomatoes, and Green Leaf Lettuces. *Journal of Food Science*, 79, M378-M383.
18. Lu, Y, Joerger, R., **Wu, C***. (2014). Similar reduction of *Salmonella enterica* Typhimurium on grape tomatoes and its cross-contamination in wash water by washing with natural antimicrobials as compared with chlorine treatment. *Food and Bioprocess Technology*, 7, 661-670.
19. Dong, X., Sikes, R., **Wu, C***. (2013) Combination of low dose of genistein and daidzein has synergistic preventive effects on isogenic human prostate cancer cells when compared with individual soy isoflavone. *Food Chemistry*, 141, 1923-1933.
20. Lu, L., Lu, H., **Wu, C.**, Fang, W., Yu, C., Ye, C., Shi, Y., Yu, T., Zheng, X. (2013)

- Rhodosporidium paludigenum* induces resistance and defense-related responses against *Penicillium digitatum* in citrus fruit. *Postharvest Biology and Technology*, 85, 196-202.
21. Wang, Y. Landman, B., **Wu, C.**, Gelb, J., Golovan, S. (2013). Comparison of vRNA and cRNA based reporters for detection of influenza replication. *Antiviral Research*, 98, 76-84.
 22. **Xu, W.**, Chen, H., Huang, Y., **Wu, C.***. (2013) Decontamination of *Escherichia coli* O157:H7 on Green Onions Using Pulsed Light (PL) and PL-Surfactant-Sanitizer Combinations. *International Journal of Food Microbiology*, 166, 102–108.
 23. Li Y, **Wu, C.***. (2013) Enhanced removal of *Salmonella* Typ himurium from blueberries by combinations of sodium dodecyl sulfate with organic acids or hydrogen peroxide. *Food Research International*, 54, 1553–1559.
 24. Dong, **X.**, Xu, W., Sikes, R. A. **Wu, C.***. (2012) Apoptotic Effects of Cooked and in vitro Digested Soy on Human Prostate Cancer Cells. *Food Chemistry*, 135, 1643-52.
 25. Neetoo, H., Lu, Y., **Wu, C.**, Chen, H. (2012) Use of high hydrostatic pressure to inactivate *E. coli* O157:H7 and *Salmonella enterica* internalized within and adhered to pre-harvest contaminated green onion. *Applied and Environmental Microbiology*, 78, 2063-2065.
 26. Lu, Y., **Wu, C.***. (2012). Reductions of *Salmonella enterica* on chicken breast by thymol, acetic acid, sodium dodecyl sulfate or hydrogen peroxide combinations as compared to chlorine wash. *International Journal of Food Microbiology* 152, 31-34.
 27. Lu, Y., Joerger, R., **Wu, C.***. (2011). Study of the Chemical Composition and Antimicrobial Activities of Ethanolic Extracts from Roots of *Scutellaria baicalensis* Georgi. *Journal of Agricultural and Food Chemistry*, 59, 10934–10942.
 28. Lu, Y., Turley, A., Dong, X., **Wu, C.***. (2011). Reduction of *Salmonella enterica* on Grape Tomatoes using Microwave Heating. *International Journal of Food Microbiology* 145, 349-352
 29. Dong, X., Dong, M., Turley, A., Lu, Y., Jin, T., **Wu, C.***. (2011). Antimicrobial and Antioxidant Activities of Lignin from Residue of Corn Stover to Ethanol Production. *Industrial Crops & Products*. 34, 1629-1634.
 30. Lu, Y., **Wu, C.***. (2010). Reduction of *Salmonella enterica* Contamination on Grape Tomatoes by Washing with Thyme oil, Thymol, and Carvacrol as compared with Chlorine Treatment. *Journal of Food Protection*, 73, 2270-2275.
 31. Hoffman-Pennesi, D., **Wu, C.***. (2010). The Effect of Thymol and Thyme Oil Feed Supplementation on Growth Performance, Serum Antioxidant Levels, and Cecal Salmonella Population in Broilers. *Journal of Applied Poultry Research*, 19, 432-443.
 32. **Wu, C.**, Duckett, S., Nee l, P. S., Font enot, J. P., Claph am, W.M. (2008). Influence of Finishing Systems on Hydrophilic and Lipophilic Oxygen Radical Absorbance Capacity (ORAC) in Beef. *Meat Science*, 80, 662-667.
 33. Li, X., He Y., **Wu, C.** (2008) Least Square Support Vector Machine Analysis for the Classification of Paddy Seeds by Harvest Year. *Information & Electrical Technologies Division of ASABE*, 51, 1793-1799.
 34. Shao, Y., He, Y., **Wu, C.** (2008). Dose Detection of Radiated Rice by Infrared Spectroscopy and Chemometrics. *Journal of Agricultural and Food Chemistry*, 56, 3960- 3965.
 35. Li, X., He, Y., **Wu, C.** (2008). Non-destructive Discrimination of the Paddy Seeds of Different Storage Periods based on Vis/NIR Spectroscopy. *Journal of Stored Product*, 44, 264-268.
 36. **Wu, C.**, Chen, F., Wang, X., Wu, Y., Dong, M., He, G., Galyean, R., He, L., Huang, G. (2007). Identification of Antioxidant Phenolic Compounds in Feverfew (*Tanacetum parthenium*) by HPLC-ESI-MS/MS and NMR. *Phytochemical Analysis*, 18, 401-410.
 37. Li, X., He, Y., **Wu, C.**, Sun, D. (2007). Nondestructive Measurement and Fingerprint Analysis of Soluble Solid Content of Tea Soft Drink based on Vis/NIR Spectroscopy. *Food*

Engineering, 82, 316-323.

38. **Wu, C.**, Chen, F., Wang, X., Kim, H-J., He, G., Haley-Zitlin, V., Huang, G. (2006). Antioxidant Constituents in Feverfew (*Tanacetum parthenium*) Extract and Their Chromatographic Quantification. *Food Chemistry*, 96, 220-227.
39. **Wu, C.**, Chen, F., Rushing, J., Wang, X., Kim, H-J., Huang, G., Haley-Zitlin, V., He, G. (2006). Antiproliferative Activities of Parthenolide and Golden Feverfew Extract against Three Human Cancer Cell Lines. *Journal of Medicinal Food*, 9, 55-61.

Book Chapter or Book

1. **Wu, C***, Peng, Y., (2018). Ch.12 Evaluation of Toxicity and Endocrine Disruption Potential of the Natural and Bio-Based Antimicrobials. In Natural and Bio-Based Antimicrobials for Food Applications ed. (Fan, X., Ngo, H., Wu, C.)
2. Jun, Y., **Wu, C.**, Li, X., Fan, X. (2018) Ch 5 Improving the Microbial Food Safety of Fresh Fruits and Vegetables with Aqueous and Vaporous Essential Oils. In Natural and Bio-Based Antimicrobials for Food Applications ed. (Fan, X., Ngo, H., Wu, C.)
3. Natural and Bio-Based Antimicrobials for Food Applications (2018). Book edited by Fan, X., Ngo, H., Wu, C. ACS Publications.

Examples of Recent Funded Research Grants

1. Epps, III, T.H., Vlachos, D., Levia, D., **Wu, C.**, Kunjapur, A. NSF-GCR (1,300,000 with my funding of \$181,268, another \$2,400,000 will be funded after 06/2021). 10/2019-9/2024. Life Cycle Management of Materials: Sustainable Biomass to Designer Polymer Systems. Co-PI.
2. Parcels, M., **Wu, C** and other 12 Co-PIs. USDA-NIFA (\$500,000) 2020-2025. The UD Envision Program: Undergraduate Research, Education and Extension Exploring One Health and Food Sustainability. Co-PI.
3. Romero, J., Annis, S.E., **Wu, C**. USDA NIFA (\$199,926 with my funding of \$8,000). 4/15/2019-4/14/2021. Technical lignins potential to prevent spoilage losses during conserved forage storage and feeding, Co-PI.
4. Wang, Q., Parveen, S., **Wu, C**. Delmarva Seed Grant (\$20,000, with my funding of \$6,000). 3/1/2019-2/28/2021. Development of effective and harmless silver-based materials as antimicrobial coatings.
5. **Wu, C.**, Peng, X. DBI CAT (49,962). 08/2018-08/2021. Development of Bacillus isolates natural alternative to antibiotics. PI.
6. **Wu, C.**, Vlachos, D. UD Center for Food Systems and Sustainability Seed Grant (40,000) 09/2018-02/2020. Conversion of Potato Peel Waste to Value-added Chemicals. PI.
7. Epps, III, T.H., Saha, B., Korley; L., **Wu, C**. UDEI Seed Grant (\$150,000 with my funding of \$40,000) Making Biorefineries Economically Viable – Valorization of Lignin to High-Performance and Scalable Materials, Co-PI.
8. Temu, V., Ndegwa, E., **Wu, C**. NIFA (\$290,000 with my funding of \$15,249) 9/1/18 -8/30/21. Studies on sustainable crop-livestock systems for free-range poultry and grain. Co-PI
9. **Wu, C**. NSF I-corps Sites (\$3,000) 09/2017-12/2017. Market feasibility of probiotics as alternatives to antibiotics for poultry industry. PI.
10. **Wu, C.**, Peng, X. DBI CAT (\$50,000)1/1/2017-12/31/2018. Development of rapid and reliable method to determine viable probiotics. PI
11. Epps, III, T.H., Kloxin. C., Wu, C. NSF (\$480,000 with my funding of \$180,000) 7/01/2015-6/30/2019. BPA Replacement with Non Toxic Biobased Monomers. Co-PI.
12. Parcels, M., **Wu, C** and other 10 Co-PIs. USDA-NIFA (\$280,518) 2017-2020. Undergraduate Research and Education Exploring One Health. Co-PI.

13. **Wu, C.** NE Sun Grant. (\$46,152) 07/01/2014-06/30/2015. Utilizing Lignocellulose-to-Ethanol Residue for Multifunctional Natural Products. PI.
14. **Wu, C.** Center for Produce Safety. (\$49,740) 01/01/2014-06/30/2015. Enhancement of Forced-Air Cooling to Reduce *Listeria monocytogenes*, *Salmonella*, and/or Total Surface Microbiota on Cantaloupes. PI.
15. **Wu, C.** Sims Mourtada J. United Soybean Board Soy Health Research Program incentive award (\$10,000). The Effect of Soy Isoflavones on Cross-talk Between Cancer Stem Cells and Immune Cells. PI.
16. **Wu, C., Sikes, R. Schmidt, C.** UDRF-Strategic Initiative. (\$45,000) 12/01/2012-06/30/2015. Is Soy Food Good for the Prevention of Prostate Cancer? PI.
17. Chen, H, Niemira, B., **Wu, C.**, Ozbay, G., Jiang, J., Li, J., Gurtler, J., Lee, K., Pivarnik, L., Worobo, R., Su, Y. USDA AFRI (total funding \$4,999,000, and my funding \$450,000) 2011-2016. Inactivation of enteric Foodborne Viruses in High Risk Foods by Non-thermal Processing Technologies. Co-PI.

Professional Society Memberships

Institute of Food Technologists (IFT)	2002-present
American Chemical Society (ACS)	2008-present
International Association of Food Protection (IAFP)	2010-present