

Quarterly Newsletter

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A report on Scholarship and Academic Activities of Interdepartmental Food Science Graduate Program (IFSGP)



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Welcome to Food Science new graduate student!!



Javier Cruz Padilla
M.S.
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Peer-reviewed Publications

1. **Abdelhaseib, M.U., Singh, A.K. & Bhunia, A.K.** 2019. Simultaneous detection of *Salmonella enterica*, *Escherichia coli*, and *Listeria monocytogenes* in food using a light scattering sensor. *Journal of Applied Microbiology*, 126(5):1496-1507.
2. **Barber, E., Turasan, H., Gezer, P., Devina, D., Liu, G. & Kokini, J.** 2019. Effect of plasticizing and crosslinking at room temperature on microstructure replication using soft lithography on Zein films. *Journal of Food Engineering*, 250: 55-64.
3. **Bonilla, J.C., Bernal-Crespo, V., Schaber, J.A., Bhunia, A.K., & Kokini, J.L.** 2019. Simultaneous Immunofluorescent Imaging of Gliadins, Low Molecular Weight Glutenins, and High Molecular Weight Glutenins in Wheat Flour Dough with Antibody-Quantum Dot Complexes. *Food Research International*, 120:776-783.
4. Cantu-Jungles, T.M., do Nascimento, G.E., **Zhang, X.**, Iacomini, M., Cordeiro, L.M. & **Hamaker, B.R.** 2019. Soluble xyloglucan generates bigger bacterial community shifts than pectic polymers during in vitro fecal fermentation. *Carbohydrate Polymers*, 206:389-395.
5. **Chapa J., Salazar, M.B.,** Kipp S., Cai H. & **Huang J.Y.** 2019. A comparative life cycle assessment of fresh imported and frozen domestic organic blueberries consumed in Indiana. *Journal of Cleaner Production*. 217:716-723
6. **Fang, F., Tuncil, Y.E.,** Luo, X., Tong, X., **Hamaker, B.R., & Campanella, O.H.** 2019. Shear-thickening behavior of gelatinized waxy starch dispersions promoted by the starch molecular characteristics. *International Journal of Biological Macromolecules*, 121:120-126
7. **Cheng, C.J., Ferruzzi, M. & Jones, O.G.** 2019. Fate of lutein-containing zein nanoparticles following simulated gastric and intestinal digestion. *Food Hydrocolloids*, 87:229-236.
8. **Cheng, C.J. & Jones, O.G.** 2019. Effect of drying temperature and extent of particle dispersion on composite films of methylcellulose and zein nanoparticles. *Journal of Food Engineering*, 250:1-64.
9. **Drolia, R. & Bhunia, A.K.** 2019. Crossing the Intestinal Barrier via *Listeria* Adhesion Protein and Internalin A. *Trends in Microbiology*. 27 (5):408-425.
10. Fitzgerald, C., Wiese, G., Moorthi, R.N., Moe, S.M., Hill Gallant, K. & **Running, C.A.** 2019. Characterizing Dysgeusia in Hemodialysis Patients. *Chemical Senses*, 44:165-171.
11. Gangoti, J., **Corwin, S.F., Lamothe, L.M.,** Vafiadci.C., **Hamaker, B.R.** & Dijkhuizen. L. 2019. Synthesis of novel α -glucans with potential health benefits through controlled glucose release in the human gastrointestinal tract. *Critical Reviews in Food Science and Nutrition*, 11:1-24.
12. Hodges, J.K., Cao, S., **Cladis, D.P. & Weaver, C.M.** 2019. Lactose intolerance and bone health: the challenge of ensuring adequate calcium intake. *Nutrients*, 11(4):718.
13. **Johnson, K.A. & Mauer, L.J.** 2019. Effects of Controlled Relative Humidity Storage on Moisture Sorption and Amylopectin Retrogradation in Gelatinized Starch Lyophiles. *Journal of Food Science*, 44:507-523.
14. **Kaur, A., Chen, T.,** Green, S.J., Mutlu, E., Martin, B., **Rumpagaporn, P.,** Patterson, J.A., Keshavarzian, A. & **Hamaker, B.R.** 2019. Physical Inaccessibility of a Resistant Starch Shifts Mouse Gut Microbiota to Butyrogenic Firmicutes. *Molecular Nutrition & Food Research*. 63:1801012.
15. **Kershaw, J.C. & Running, C.A.** 2019. Dose–response functions and methodological insights for sensory tests with astringent stimuli. *Journal of Sensory Studies*, 34(1):e12480.
16. Li, M., George, J., Hunter, S., **Hamaker, B.R., Mattes, R. & Ferruzzi, M.G.** 2019. Potato product form impacts in vitro starch digestibility and glucose transport but only modestly impacts 24h blood glucose response in humans. *Food & Function*. 10:1846-1855.
17. **Lim, J., Zhang, X., Ferruzzi, M.G. & Hamaker, B.R.** 2019. Starch digested product analysis by HPAEC reveals structural specificity of flavonoids in the inhibition of mammalian α -amylase and α -glucosidases. *Food Chemistry*, 288: 413-421.
18. Liu, G., Gilding, E.K., Kerr, E.D., Schulz, B.L., Tabet, B., **Hamaker, B.R.** & Godwin, I.D. 2019. Increasing protein content and digestibility in sorghum grain with a synthetic biology approach. *Journal of Cereal Science*, 85:27-34.
19. Liu, J., Johnson, R., Dillon, S., Kroehl, M., Frank, D.N., **Tuncil, Y.E., Zhang, X.,** Ir, D., Robertson, C.E., Seifert, S., Higgins, J., **Hamaker, B.,** Willson, C.C. & Erlandson, K.M. 2019. Among older adults, age-related changes in the stool microbiome differ by HIV-1 serostatus. *EBioMedicine*, 40:583-694.
20. **Lu, J., Corvalan, C.M.,** Chew, Y. J. & **Huang, J.-Y.** 2019. Coalescence of small bubbles with surfactants. *Chemical Engineering Science*, 196:493-500.
21. **Maldonado, L.,** Chough, S., **Kim, K.H., Bonilla, J. & Kokini, J.** 2019. Mechanism of fabrication and nano-mechanical properties of α -lactalbumin/chitosan and bsa/k-carrageenan nanotubes through layer-by-layer assembly for curcumin encapsulation and determination of in vitro cytotoxicity. *Food Hydrocolloids*, 93, 293-307.
22. **Mauer, L.J.,** Forny, L., Meunier, V.D., & Taylor, L.S. 2019. Optimizing the Quality of Food Powder Products: The Challenges of Moisture-Mediated Phase Transformations. *Annual Review of Food Science and Technology*, 10:457-478.

23. Mendis, M., Leclerc, E., **Reuhs, B.L. & Simsek, S.** 2019. Structure driven immunomodulatory properties of xylo-/arabinoxyloligosaccharides and arabinoxylans in RAW264. 7 macrophages. *Bioactive Carbohydrates and Dietary Fibre*. 17:100177.
24. **Nkhata, S.G.**, Ortiz, D., Baributsa, D., **Hamaker, B.**, Rocheford, T. & **Ferruzzi, M.G.** 2019. Assessment of oxygen sequestration on effectiveness of Purdue Improved Crop Storage (PICS) bags in reducing carotenoid degradation during post-harvest storage of two biofortified orange maize genotypes. *Journal of Cereal Science*, 87:68-77.
25. Olivera, N., **Rouf, T.B., Bonilla, J.C.**, Carriazo, J. G., Dianda, N. & **Kokini, J.L.** 2019. Effect of LAPONITE® addition on the mechanical, barrier and surface properties of novel biodegradable kafirin nanocomposite films. *Journal of Food Engineering*, 245:24-32.
26. Rashid, F., Ahmed, Z., Hussain, S., **Huang, J.-Y. & Ahmad, A.** 2019. Linum usitatissimum L. seeds: Flax gum extraction, physicochemical and functional characterization. *Carbohydrate Polymers*, 215(1):29-38.
27. **Reddivari, L.**, Wang, T., Wu, B. & Li, S. 2019. Potato: An anti-inflammatory food. *American Journal of Potato Research*, 96:164-169.
28. Roman, L., Gómez, M., **Hamaker, B.R. & Martinez, M.M.** 2019. Banana starch and molecular shear fragmentation dramatically increase structurally driven slowly digestible starch in fully gelatinized bread crumb. *Food Chemistry*, 274: 664-671.
29. **Sahasrabudhe, S.N.**, Chaudhari, S.S. & **Farkas, B.E.** 2019. Experimental measurement of factors affecting dynamics of bubble growth from a submerged orifice: Applications to the frying process. *Journal of Food Engineering*, 251:36-44.
30. **Sahasrabudhe, S.N.**, Staton, J.A. & **Farkas, B.E.** 2019. Effect of frying oil degradation on surface tension and wettability. *LWT*, 99:519-524.
31. Tejada-Ortigoza, V., Garcia-Amezquita, L.E., **Kazem, A.E., Campanella, O.H., Cano, M.P., Hamaker, B.R., Serna-Saldivar, S.O. & Welti-Chanes, J.** 2019. In Vitro Fecal Fermentation of High Pressure-Treated Fruit Peels Used as Dietary Fiber Sources. *Molecules*, 24(4): 697.
32. **Turasan, H.**, Cakmak, M. & **Kokini, J.** 2019. Fabrication of zein-based electrospun nanofiber decorated with gold nanoparticles as a SERS platform. *Journal of Materials Science*, 54 (12):8872-8891.
33. **West, A.M.**, Teska, P.J. & **Oliver, H.F.** 2019. There is no additional bactericidal efficacy of Environmental Protection Agency-registered disinfectant towelettes after surface drying or beyond label contact time. *American Journal of Infection Control*, 47(1):27-32.
34. Yilmaz, T., **Maldonado, L., Turasan, H. & Kokini, J.** 2019. Thermodynamic mechanism of particulation of sodium alginate and chitosan polyelectrolyte complexes as a function of charge ratio and order of addition. *Journal of Food Engineering*, 254:42-50.
35. **Zhang, B.Y., Lu, J. & Huang, J.-Y.** 2019. Effect of sugar on the fouling behavior of whey protein. *Food and Bioprocess Processing*, 113:2-9.
36. **Zhang, X., Chen, T., Lim, J., Gu, F., Fang, F., Cheng, L., Campanella, O.H. & Hamaker, B.R.** 2019. Acid gelation of soluble laccase-crosslinked corn bran arabinoxylan and possible gel formation mechanism. *Food Hydrocolloids*. 92:1-9

Miscellaneous Publications

1. **Barrett, T.**, Clymer, C. & **Feng, Y.** 2019. Overview of home-based vendor law. (<https://mdc.itap.purdue.edu/item.asp?itemID=23253>).
2. Zinati, G., **Reddivari, L. & Kemper, D.** 2019. Reduced-Tillage Increases Nutrient Concentrations in Stored Winter Squash: α -Carotene, Lutein, Phosphorus and Calcium. (<https://projects.sare.org/information-product/reduced-tillage-increases-nutrient-concentrations-in-stored-winter-squash-alpha-carotene-lutein-phosphorus-and-calcium/>).

Book Chapters

1. **BeMiller, J.N.** Corn Starch Modification. *Corn*. AACC International Press, 2019. 537-549.
2. **BeMiller, J.N.** Marigold Flower: Industrial Applications of. *Encyclopedia of Plant and Crop Science (Print)*. Routledge, 2019. 689-690.
3. **Cho, Y.-H. & Jones, O.G.** Assembled Protein Nanoparticles in Food or Nutrition Applications. *Food Applications of Nanotechnology*. Academic Press, 2019.
4. **Hamaker, B.R., Tuncil, Y.E. & Shen, X.** "Carbohydrate of the Kernel." *Corn*. Elsevier, 2019. 305-318.
5. Sadeghi, R., Chuacharoen, T., Sabliov, C.M., Moraru, C., Karimi, M. & **Kokini, J.** 2019. Advances in nanotechnology of food materials for food and non-food applications. Chapter 2, pp 153-224 In Handbook of Food Engineering Third Edition, Ed. Dennis R. Heldman, Daryl B. Lund, Christina Sabliov. CRC Press.
6. **Singh, A.K., & Bhunia, A.K.** 2019. Optical biosensors in foodborne pathogen detection. In Smart Biosensor Technology, Second Edition, Editors: G. K. Knopf & A.S. Bassi, CRC Press, Taylor and Francis Group, Boca Raton, FL. pp 442-467.

Presentations

1. Andolino C., Calvert R. & **Running C.A.** 2019. A teaching laboratory on the physical and chemical properties of sweeteners. Institute of Food Technologists Annual Meeting and Expo. New Orleans, Louisiana, USA. Poster Presentation.
2. **Barrett, T. & Feng, Y.** Food Safety Content Assessment of Online Egg Noodle Shared Video Recipes, Consumer Food Safety Education Conference, Orlando, March 2019.
3. **Barrett, T. & Feng, Y.** Use of Observation to Measure Effectiveness of Positive Deviance Curriculum among Youths, Consumer Food Safety Education Conference, Orlando, March 2019.
4. **Bhunia, A.K.** 2019. Foodborne Disease Prevention Strategies: Biosensors and Probiotic Vaccine” King Abdulaziz University, Jeddah, Saudi Arabia; March 6, 2019
5. Calvert R., Andolino C. & **Running C.A.** 2019. Thinking outside the bench: Teaching chemistry of foods in kitchens. Institute of Food Technologists Annual Meeting and Expo. New Orleans, Louisiana, USA. Poster Presentation.
6. **Cladis D.P.**, Andolino C., Calvert R. & **Running C.A.** 2019. Demonstrating protein functionality in foods: an innovative teaching lab for students in any setting. Institute of Food Technologists Annual Meeting and Expo. New Orleans, Louisiana, USA. Poster Presentation.
7. **Corwin, S.F., Muniandy, A., Federici, E. & Pal, K.** What Will We Eat in 2169? Agriculture and Biological Engineering 150th Graduate Student Symposium, Purdue University, March 2019.
8. Davis L. & **Running C.A.** 2019. Collection method alters observed concentration of salivary proteins important to oral sensation. Association for Chemoreception Sciences Annual Meeting. Bonita Springs, FL, USA. Poster Presentation.
9. Janetsian-Fritz S.S., Oberlin B.G., Dzemiđić M., **Running C.A.** & Kareken D.A. 2019. Greater sour liking is associated with AUDIT and novelty seeking. Research Society on Alcohol. Minneapolis, Minnesota, USA. Poster Presentation.
10. Wierenga M., **Crawford C.R. & Running C.A.** 2019. Water should not feel like slime: Sensory acceptability of chemesthetic beverages for managing swallowing disorders. Association for Chemoreception Sciences Annual Meeting. Bonita Springs, FL, USA. Poster Presentation.

Graduated Students with Thesis/Dissertation Titles

1. **James Chapa-MS (Farkas/Huang):** Sustainability Studies of Food Production and Consumption
2. **Shreya Sahasrabudhe-PhD (Farkas):** Physical properties of food oils and factors affecting bubble dynamics during frying
3. **Leigh Robison Schmidt-PhD (Hamaker):** Investigating Phenolic-Mediated Protein Matrix Development for Potential Control of Cereal Starch Digestion
4. **Riya Thakkar-MS (Lindemann):** Effect of Bran Particle Size on Gut Microbiota Community Structure and Function
5. **Xiaowei Zhang-PhD (Hamaker):** Gut Microbiota Differentially Responds to Corn Bran Arabinoxylans in Different Chemical and Physical Forms

Graduate Student/Post Doctorate Achievements/Awards

1. **Xingjian Bai** – Health and Disease: Science, Technology, Culture and Policy Research Poster Session Award (3rd place in Health Science Division), Purdue University, February 28, 2019
2. **Tressie Barrett**-Consumer Food Safety Education Conference Travel Scholarship Award, 2019.
3. **Sarah Corwin**-American Society of Baking National Competition Finalist, Chicago, IL, February 2019.
4. **Sarah Corwin**-Student Soybean Product Innovation Competition Finalist, Purdue University, March 2019.
5. **Yezhi Fu**-B.J. Liska Outstanding Teaching Assistant Award, Purdue University, December 2018.
6. **Rachel Jackson**-American Society of Baking National Competition Finalist, Chicago, IL, February 2019.
7. **Morgan Malm**-Student Soybean Product Innovation Competition, First Place, Purdue University, March 2019.
8. **Anbuhkani Muniandy**-American Society of Baking National Competition Finalist, Chicago, IL, February 2019.
9. **Anbuhkani Muniandy**-Agricultural and Biological Engineering Sixth Annual Symposium, First Place, Purdue University, March 2019.
10. **Pablo Torres Aguilar**- American Society of Baking National Competition Finalist, Chicago, IL, February 2019.
11. **Pablo Torres Aguilar**-Teaching Academy Graduate Teaching Award, Center for Instructional Excellence, Purdue University, Spring 2019.
12. **Tongyu “Sophie” Wu**-B.J. Liska Outstanding Teaching Assistant Award, Purdue University, December 2018.

Graduate Students Inducted to Phi Tau Sigma Hoosier Chapter 2019

1. Merve Yildrin Erturk
2. Miguel A. Alvarez Gonzalez
3. Anbuhkani “Connie” Muniandy
4. Caitlinn Lineback (Undergrad)