

Alexander Chouljenko

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a. Professional Preparation

Louisiana State University, Baton Rouge, LA	Kinesiology	B.S., 2013
Louisiana State University, Baton Rouge, LA	Food Science	M.S., 2015
Louisiana State University, Baton Rouge, LA	Food Science	Ph.D., 2019

b. Appointments

2020-present- Assistant Professor and Director of the Seafood Technology Program at North Carolina State University

c. Experiences

- Developed a spray-dried nanoencapsulated fish oil powder rich in omega-3 fatty acids and studied its stability during storage.
- Applied chitosan nanoparticles and water-soluble chitosan to shrimp through vacuum tumbling to maintain its quality during refrigerated and frozen storage.
- Collaborated with a graduate intern from the University of the West Indies at Mona, Jamaica with a project to develop a pectin-gelatin gel fortified with an oral rehydration solution to help treat dehydrated children.
- Developed an oyster flavor powder from processing byproducts provided by an oyster processor in Louisiana. The powder was shown in the Institute of Food Technologists (IFT) Food Technology magazine, June 2017 issue.
- Helped a crawfish farmer in Louisiana to develop a minced meat product from undersized crawfish, making use of crawfish which are too small for hand peeling and are either sold at reduced price or discarded.
- Extracted a red crawfish oil from crawfish minced meat, utilizing undersized crawfish. The oil was mentioned on August 2017 in The Advocate, Louisiana's largest daily newspaper.
- Collaborated with a manufacturer of seafood processing equipment in Louisiana to improve their shrimp peeler's yields.
- Assisted in the application of a polyaniline biosensor for packaged catfish fillets to detect spoilage compounds (biogenic amines) during refrigerated storage.
- Operated pilot plant equipment for food processing applications, including spray dryer, cryogenic freezer (tunnel and cabinet), meat/bone separator, vacuum tumbler, modified atmosphere packaging machines (for trays and bags), and rice processing mill.
- Hosted a visiting aquaculture scientist from the Netherlands to see the Louisiana seafood industry.
- Reviewed a manuscript regarding food security and sustainability for Borlaug LEAP.
- Demonstrated the rice milling process for high school students in the Louisiana 4-H Program.
- Worked with Louisiana State University (LSU) International Programs to host visiting students, faculty, and industry professionals working in food science from China and Thailand.

d. Courses/Labs Taught

- BE 2352 Quantitative Biology in Engineering: lectured about economic and data analysis, instructed class laboratories on histograms, probability, and growth and quantification of bacterial cells (LSU).
- NFS 4075 Food Preservation: lectured about food preservation by irradiation, instructed class laboratories on chemical analysis (pH, titratable acidity, °Brix), ice cream making, lactic acid fermentation, vacuum tumbling, and freezing techniques (LSU).
- NFS 4005 Food Engineering Systems: instructed class laboratories on rheology, texture profile analysis, modified atmospheric packaging, and spray drying (LSU).
- AGRI 1001 Introduction to Agriculture: instructed a class laboratory on the orange juice production process (LSU).
- FS 520 Pre-Harvest Food Safety: guest lectured about seafood industry, hazards, and safety (NC State)
- Seafood Hazard Analysis Critical Control Point (HACCP) Segment Two (NC State)

e. Publications

Bradford, R., Reyes, V., Bonilla, F., Bueno, F., Dzandu, B., Liu, C., **Chouljenko, A.**, & Sathivel, S. (2019). Development of milk powder containing *Lactobacillus plantarum* NCIMB 8826 immobilized with prebiotic hi-maize starch and survival under simulated gastric and intestinal conditions. *Food Production, Processing and Nutrition*, 1(1), 10.

Bonilla, F., **Chouljenko, A.**, Lin, A., Young, B. M., Goribidanur, T. S., Blake, J. C., Bechtel, P. J., & Sathivel, S. (2019). Chitosan and water-soluble chitosan effects on refrigerated catfish fillet quality. *Food Bioscience*, 31, 100426.

Taylor, T., **Chouljenko, A.**, Bonilla, F., Scott, R., Bueno, F., Reyes, V., Lanclos, C., Calumba, K. F., & Sathivel, S. (2019). A pectin-gelatin gel containing oral rehydration solution and the release of sodium chloride under simulated gastric conditions. *International Journal of Biological Macromolecules*, 136, 1112-1118.

Solval, K. M., **Chouljenko, A.**, Chotiko, A., & Sathivel, S. (2019). Growth kinetics and lactic acid production of *Lactobacillus plantarum* NRRL B-4496, *L. acidophilus* NRRL B-4495, and *L. reuteri* B-14171 in media containing egg white hydrolysates. *LWT - Food Science and Technology*, 105, 393-399.

Alfaro, L., Chotiko, A., **Chouljenko, A.**, Janes, M., King, J. M., & Sathivel, S. (2018). Development of water-soluble chitosan powder and its antimicrobial effect against inoculated *Listeria innocua* NRRL B-33016 on shrimp. *Food Control*, 85, 453-458.

Alfaro, L., Siramard, S., **Chouljenko, A.**, & Sathivel, S. (2018). Effects of liquid nitrogen pretreatment on the osmotic dehydration and quality of cryogenically frozen blueberries (*Vaccinium angustifolium* Ait.). *Food Bioscience*, 22, 165-169.

Li, J., Chotiko, A., **Chouljenko, A.**, Gao, C., Zheng, J., & Sathivel, S. (2018). Delivery of alpha-tocopherol through soluble dietary fibre-based nanofibres for improving the

life span of *Caenorhabditis elegans*. *International Journal of Food Sciences and Nutrition*, 70(2), 172-181.

- Reyes, V., Chotiko, A., **Chouljenko, A.**, Campbell, V., Liu, C., & Sathivel, S. (2018) Influence of wall material on production of spray dried *Lactobacillus plantarum* NRRL B-4496 and its viability at different storage conditions. *Drying Technology*, 36(14), 1738-1748.
- Reyes, V., Chotiko, A., **Chouljenko, A.**, & Sathivel, S. (2018) Viability of *Lactobacillus acidophilus* NRRL B-4495 encapsulated with high maize starch, maltodextrin, and gum arabic. *LWT - Food Science and Technology*, 96, 642-647.
- Roberts, D., Reyes, V., Bonilla, F., Dzandu, B., Liu, C., **Chouljenko, A.**, & Sathivel, S. (2018) Viability of *Lactobacillus plantarum* NCIMB 8826 in fermented apple juice under simulated gastric and intestinal conditions. *LWT - Food Science and Technology*, 97, 144-150.
- Ahmad, U., Alfaro, L., Yeboah-Awudzi, M., Kyereh, E., Dzandu, B., Bonilla, F., **Chouljenko, A.**, & Sathivel, S. (2017). Influence of milling intensity and storage temperature on the quality of Catahoula rice (*Oryza sativa* L.). *LWT - Food Science and Technology*, 75, 386-392.
- Alfaro, L., Zhang, J., **Chouljenko, A.**, Scott, R., Xu, Z., Bankston, D., Bechtel, P. J., & Sathivel, S. (2017). Development and characterization of emulsions containing purple rice bran and brown rice oils. *Journal of Food Processing and Preservation*, 41(5), e13149.
- Bonilla, F., **Chouljenko, A.**, Reyes, V., Bechtel, P. J., King, J. M., & Sathivel, S. (2017). Impact of chitosan application technique on refrigerated catfish fillet quality. *LWT - Food Science and Technology*, 90, 277-282.
- Chouljenko, A.**, Chotiko, A., Bonilla, F., Moncada, M., Reyes, V., & Sathivel, S. (2017). Effects of vacuum tumbling with chitosan nanoparticles on the quality characteristics of cryogenically frozen shrimp. *LWT - Food Science and Technology*, 75, 114-123.
- Gurdian, C., **Chouljenko, A.**, Solval, K. M., Boeneke, C., King, J. M., & Sathivel, S. (2017). Application of edible films containing oregano (*Origanum vulgare*) essential oil on queso blanco cheese prepared with flaxseed (*Linum usitatissimum*) oil. *Journal of Food Science*, 82(6), 1395-1401.
- Gurdian, C., Reyes, V., Kyereh, E., Bonilla, F., Galindo, C., **Chouljenko, A.**, Solval, K. M., Boeneke, C., King, J. M., & Sathivel, S. (2017). Incorporating flaxseed (*Linum usitatissimum*) oil into queso blanco at different stages of the cheese manufacturing process. *Journal of Food Processing and Preservation*, 41(6), e13279.
- Chouljenko, A.**, Chotiko, A., Reyes, V., Alfaro, L., Liu, C., Dzandu, B., & Sathivel, S. (2016). Application of water-soluble chitosan to shrimp for quality retention. *LWT - Food Science and Technology*, 74, 571-579.

Chouljenko, A., Chotiko, A., Solval, M. J. M., Solval, K. M., & Sathivel, S. (2016). Chitosan nanoparticle penetration into shrimp muscle and its effects on the microbial quality. *Food and Bioprocess Technology*, 10(1), 186-198.

Li, J., Solval, K. M., Alfaro, L., Zhang, J., Chotiko, A., Delgado, J. L. B., **Chouljenko, A.**, Bankston, D., Bechtel, P. J., & Sathivel, S. (2015). Effect of blueberry extract from blueberry pomace on the microencapsulated fish oil. *Journal of Food Processing and Preservation*, 39(2), 199-206.

Mohideen, F. W., Solval, K. M., Li, J., Zhang, J., **Chouljenko, A.**, Chotiko, A., Prudente, A. D., Bankston, J. D., & Sathivel, S. (2015). Effect of continuous ultra-sonication on microbial counts and physico-chemical properties of blueberry (*Vaccinium corymbosum*) juice. *LWT - Food Science and Technology*, 60(1), 563-570.

f. Presentations

Chouljenko, A., Alfaro, L., Bramble, T., Chotiko, A., & Sathivel, S. (2014). Combined cryogenic freezing and freeze drying techniques to produce a nano-encapsulated fish oil. Ann. Mtg. of the Institute of Food Technologists, New Orleans, LA. (Poster)

Chouljenko, A., Bonilla, F., Moncada, M., Chotiko, A., & Sathivel, S. (2015). Effects of vacuum tumbling with chitosan nanoparticles on the shelf life of cryogenically frozen shrimp. Ann. Mtg. of the Institute of Food Technologists, Chicago, IL. (Poster)

Chouljenko, A., Solval, K. M., Chotiko, A., & Sathivel, S. (2016). Evaluating the microbial quality of shrimp vacuum tumbled with sonicated and ultra-sheared chitosan and chitosan nanoparticles during refrigerated storage. Ann. Mtg. of the Institute of Food Technologists, Chicago, IL. (ePoster)

Chouljenko, A., & Chotiko, A. (2017). Production of oyster flavor powder from byproducts of the Gulf of Mexico oyster industry. Ann. Mtg. of the Institute of Food Technologists, Las Vegas, NV. (Poster)

Chouljenko, A., Reyes, V., Bonilla, F., Dzandu, B., & Sathivel, S. (2018). Heat and oxidative stable oil with red color extracted from undersized crawfish. Ann. Mtg. of the Institute of Food Technologists, Chicago, IL. (Poster)

Chouljenko, A., Ortega, L., Reyes, V., Garcia, A., Bueno, F., Calumba, K., & Sathivel, S. (2019). Application of adsorption technology to remove off-flavors from fish oil containing crawfish astaxanthin. Ann. Mtg. of the Institute of Food Technologists, New Orleans, LA. (Poster)

Chouljenko, A. (2020). Adding value to the North Carolina seafood industry through research and education. Center for Marine Sciences and Technology (CMAST), Morehead City, NC. (Seminar)

g. Honors and Awards

- First place winner of the graduate student research paper competition in the IFT Refrigerated and Frozen Foods Division, sponsored by Phi Tau Sigma & IFT (2014)
- First place winner of the graduate student research paper competition in the IFT Refrigerated and Frozen Foods Division, sponsored by Phi Tau Sigma & IFT (2015)
- Eurofins Central Analytical Laboratories Scholarship, presented by the Gulf Coast Section of IFT and Eurofins Central Analytical Laboratories (2016)
- Eurofins Central Analytical Laboratories Scholarship, presented by the Gulf Coast Section of IFT and Eurofins Central Analytical Laboratories (2017)
- Graduate Scholarship, presented by Feeding Tomorrow, the Foundation of IFT (2016)
- Graduate Scholarship, presented by Feeding Tomorrow, the Foundation of IFT (2017)
- Robert M. Grodner Fellowship, presented by the Louisiana State University School of Nutrition and Food Sciences (2017)
- Robert M. Grodner Fellowship, presented by the Louisiana State University School of Nutrition and Food Sciences (2018)
- Tom Quinn & Associates Scholarship, presented by Tom Quinn & Associates, LLC and the Gulf Coast Section of IFT (2018)
- Featured in the IFT Refrigerated and Frozen Foods Division November Member Highlight (2018)
- Finalist in the Three-Minute Thesis (3MT) Competition, hosted by the LSU Graduate School (2019)

h. Participation in Professional Meetings

- IFT Annual Conferences (2014-2019)
- IFT Gulf Coast Section Meetings (2013-2018)
- PerkinElmer Materials Characterization and Chromatography Workshop (2018)

i. Membership in Professional Societies

- Institute of Food Technologists (2014-2020)
- IFT Student Association (2014-2019)
- Phi Tau Sigma, The Honor Society of Food Science and Technology (2018-2019)
- American Oil Chemists' Society (2017-2019)
- Louisiana State University Food Science Club (2013-2019) (Treasurer in 2016-2017)

j. Courses/Training Completed

- Seafood HACCP Basic Course
- Sanitation Control Procedures (SCP) for Processing Fish and Fisheries Products Basic Course
- Seafood HACCP Train-the-Trainer
- SCP for Processing Fish and Fisheries Products Train-the-Trainer
- Food Safety Preventative Controls Course