

Zhuoheng Li

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EDUCATION

- Ph.D. in Molecular Nutrition
Cornell University, Ithaca, NY Expected Aug 2026
- M.S. in Biochemical and Molecular Nutrition with a specialization in Bioinformatics May 2021
Tufts University, Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy, Boston, MA
- B.S. with Honors in Food Science and Technology Jun 2018
University of California, Davis, Davis, CA

RESEARCH EXPERIENCE

- The Vacanti Lab at Cornell University Nov 2021 - Present
- Graduate Research Assistant under Nathaniel Vacanti, Ph.D.
 - Built the Breast Cancer Data Portal; it is an interactive tool for visualizing proteome and transcriptome data from most recent in-depth breast cancer multi-omics landscape studies; it aims to provide new biological insights and potential prognostic candidates for breast cancer classification, diagnosis, and treatment; delivered poster presentations and demonstrated its usage in two symposia; manuscript in preparation.
 - Developing a deep learning model to predict protein-drug interactions using multiplexed mass spectrometry-based proteomics in tandem with machine learning applications.
- First-year Rotation Student Sep 2021 - Nov 2021
- Completed small projects in the Vacanti and Qian labs during rotation.
- The Nutrition and Genomics Lab at Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University Sep 2020 - Aug 2021
- Graduate Research Assistant under José M. Ordovás, Ph.D. with direct supervision from Chao-Qiang Lai, Ph.D.
 - Investigated metabolic and genetic links between Dietary Approach to Stop Hypertension (DASH) style diet and hypertension in Boston Puerto Rican population; used regression models to identify metabolite signatures and characterized them into major pathways via enrichment analysis; conducted genome-wide association study (GWAS) to identify quantitative trait loci that are associated with previous identified metabolite signatures.
 - Identified multiple metabolites in the amino acid and lipid super pathways that are significantly associated with DASH-style diet and hypertension.
 - Analyzed genomic data to extract significant SNPs in the association between type 2 diabetes and obesity.
- The Nutrition and Cancer Biology Lab at Jean Mayer USDA Human Nutrition Research Center on Aging at Tufts University Jan 2020 - May 2021
- Graduate Research Assistant under Xiang-Dong Wang, M.D., Ph.D.
 - Explored the role of SIRT1 and its associated genes in hepatocellular carcinoma (HCC); compared the mRNA expression profile of gene of interests between 10 pairs of HCC tumor tissue and adjacent non-tumor tissue from patients using real-time PCR; utilized RNAseq data from the TCGA liver cancer cohort (LIHC) and performed differential expression analyses to validate real-time PCR data; identified differentially expressed gene candidates associated with SIRT1.
 - Confirmed gene expression of SIRT1 and NAMPT are downregulated in HCC tumor compared to adjacent non-tumorous tissue with wet and dry lab approaches; generated a list of differentially expressed genes for future research directions; postulated 2 potential mechanistic axes of NAMPT suppression in HCC tumor and proposed tumor stage progression could contribute to gene expression differences.

Davis Sensory Institute, LLC

Principal Analyst Nov 2018 - Jun 2019
Sensory Intern Jun 2018 - Oct 2018

- Designed sensory evaluations on food and personal care products; created project execution plans; conducted sensory evaluations of food products among ~50 descriptive panelists and 100+ consumers.
- Generated and troubleshot product evaluation questionnaires for descriptive analyses and consumer studies.
- Performed panel management including screening and scheduling; transcribed panel focus group and summarized product feedback.
- Analyzed data and extracted product insights using statistical methods and data visualizations; wrote project reports for clients.

The Beckles Lab at University of California, Davis May 2017 - Jun 2018

- Undergraduate Research Assistant under Diane M Beckles, Ph.D. with direct supervision with Bixuan Chen, M.S.
- Evaluated the effect of 5-azacytidine on post-harvest chilling injury in tomato (*Solanum lycopersicum L.*) and on chilling-stress in cucumber (*Cucumis sativus L.*) at different storage temperatures.
- Transplanted tomato seedlings to greenhouses and monitored growth status; set up treatments for cucumber seeds and measured length of radicles; measured expiration rates of tomato fruits under different temperature exposures; extracted and purified DNA from tomato fruits and cucumber radicle; performed DNA follow-up analyses; evaluated tomato fruits quality (color and texture).
- Identified that 5-azacytidine can abate postharvest chilling injury in tomato and growth rate of the 5-azacytidine treated radicles is suppressed after exposure to chilling-stress.

POSTER PRESENTATIONS

Jeong H., **Li Z.**, Vacanti N.M., "Proteomic Alterations Associated with Metabolic Adaptations Facilitate Detached Breast Tumor Cell Survival." 8th International Caparica Conference on Analytical Proteomics 2022.

Fan R., Thomas S.S., You M., **Li Z.**, Bessell B., Puniya B.L., Helikar T., Liu Z., Chung S., "Fish Oil Intake during Gestation and Lactation Attenuated STZ-Induced Diabetes in Male Offspring via Activation of Brown Fat and Modulating Oxylin Profile." ASN Nutrition 2022 Live Online.

Li Z., Vacanti N.M., "A Tale of Three Proteomes: Visualizing Protein and Transcript Abundance Relationships in Breast Tumors." Cornell University 3rd Annual Intercampus Cancer Symposium and Cornell University Center for Vertebrate Genomics: Pioneers and Rising Stars Symposium.

AWARDS

Gershoff - Simonian Prize for Research Excellence in Nutrition Science and Policy May 2021
The award is bestowed annually by Friedman School to a graduate student who has excelled in their chosen field of study, and who exemplifies the same creativity and dedication to the discipline of nutrition as Dr. Stanley N. Gershoff.

Merit Based Tuition Scholarships Sep 2019 - May 2021
Departmental Citation for Outstanding Undergraduate Accomplishment in Food Science and Technology Jun 2018
In recognition of outstanding undergraduate accomplishment in Food Science and Technology

Dean's Honors in College of Agriculture and Environmental Sciences Jun 2015 - Dec 2016
The quarterly Dean's Honors List includes students with a GPA equal to or higher than the minimum GPA attained by the upper 16% of those registered in the same class level and college during that quarter.