

# 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 Sep 2020 - Aug 2021  
Center on Aging at Tufts University
- 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 Jan 2020 - May 2021  
Research Center on Aging at Tufts University
- 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." 8<sup>th</sup> 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 3<sup>rd</sup> 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.*