

KOREA-US Frontiers in Health and Life Sciences

2025. 11. 6^(Thu) - 7^(Fri)
Four Seasons Hotel, Grandballroom(3F)



Curriculum Vitae

Name	First Name	Blanche C.	Last Name	Ip
Country	United States of America			
Affiliation	The Broad Institute of MIT and Harvard			



Educational Background

1999 – 2004 B.Sc., (Hons). University of Toronto (Nutritional Sciences)
 2010 – 2012 M.Sc., Tufts University (Biochemical and Molecular Nutrition)
 2012 – 2014 Ph.D., Tufts University (Biochemical and Molecular Nutrition) (NIH T32 NRSA Fellow)
 Topic: Mechanisms of Lycopene Action on Atherosclerotic and Liver Diseases Outcomes.

Professional Career

2024- Group Leader, Research Scientist, PRISM lab, Broad Institute
 2022-2023 Senior Research Scientist I, PRISM lab, Broad Institute
 2022- Adjunct Assistant Professor (Research), Department of Pathology and Laboratory Medicine, Brown University
 2021-2022 Assistant Professor (Research), Department of Pathology and Laboratory Medicine, Brown University
 2018-2021 Assistant Professor (Research), Department of Molecular Pharmacology, Physiology and Biotechnology (MPPB), Brown University
 2018 Lecturer, Friedman School of Nutrition at Tufts University
 2017-2018 Visiting Scholar, Department of MPPB, Brown University (J.R. Morgan)
 2016 Lecturer, Friedman School of Nutrition at Tufts University
 2015-2017 Postdoctoral Fellow, Department of MPPB, Brown University (J.R. Morgan)
 2014-2015 Postdoctoral Fellow, Department of Microbiology, Boston University (B. Nikolajczyk, G.V. Denis)

Research Fields

1. Obesity, metabolic diseases and liver cancer.
2. Immune response and diabetes progression.
3. Bioengineering three dimensions in vitro tissues to elucidate cancer biology, toxicity testing, and tissue regeneration.
4. Develop high-throughput screening platforms for the development of cancer therapeutics.

I am a Group Leader, Research Scientist at the PRISM Lab of the Broad Institute. PRISM is a multiplexed cell line profiling of over 900 genetically distinct cancer cell lines spanning 45 lineages by labeling each of the cell lines with a unique 24-nucleotide barcode. The cell line-specific barcodes allow for the rapid screening of drugs when culturing cell lines in pools of 20-25 lines, given that PRISM revealed the expected patterns of cell killing seen in conventional (unpooled) assays. Importantly, we leverage the baseline cellular features (e.g., gene expression, cell lineage, mutation, copy number, metabolomics, proteomics, genome-wide RNAi and CRISPR dependencies) of each cell line to identify new modes of action of compounds through interpreting viability profiles and biomarkers of compound response.

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I currently lead the efforts to optimize and expand the current selection of PRISM cellular models, lead Research and Development efforts to develop new screening paradigms and innovation including but not limited to three-dimensional (3D) tissue culture, as well as to provide scientific leadership and support for research between PRISM and our collaborators. My efforts to develop new screening paradigm leverages my on-going research interests in 3D tissue culture, biomaterials, extracellular matrix, with an awarded NIBIB R03 grant by the Biomaterials and Biointerfaces (BMBI) Study Section (scored at 2%), and an awarded NIAMS R21 that focuses on utilizing tissue engineering system to fabricate biomaterials (including extracellular matrix) for basic science research and novel therapeutics.

My current role at PRISM builds on my previous training in investigating the therapeutic efficacies and their associated molecular mechanisms of action of agents that supports human health outcomes. I completed my Ph.D. in Biochemical and Molecular Nutrition with Prof. Xiang-Dong Wang at Tufts University as a NIH-NRSA predoctoral trainee in 2014 with 7 peer-reviewed publications (5 as first author) in less than 4 years. My thesis utilized a series of in vivo models to elucidate the therapeutic potential of dietary lycopene to ameliorate obesity-associated liver cancer and metastasis. I was awarded the Irwin H. Rosenberg Award for Excellence in Predoctoral Research (best Ph.D. thesis of graduating year), the Marianne Louise Mock Dallas Prize for Research Excellence in Cancer, and I was honored to deliver the graduate commencement address. I further expanded my research knowledge in human translational research when I joined Boston University as a NIH-NRSA postdoctoral trainee (PI: B. Nikolajczyk, G.V. Denis), where I collaborated with clinicians and students to explore how human immune systems are involved in diabetes progression. My postdoctoral training was conducted at Brown University with Prof. Jeffrey R. Morgan, leading and collaborating with a multidisciplinary team to build a semi-automated machine that bio-fabricates massive solid tissues in vitro with physiological structure, density, function, and sustained viability. I continued to expand my innovation experience through collaborating with biology and engineering students on projects involving fabrication and mathematical simulation. In total, I have published 23 peer-reviewed publications, (3 as corresponding author, 12 as first author) in high impact journals, including Cell Metabolism, Trends in Endocrinology and Metabolism, Cancer Prevention Research, Biofabrication, and Comprehensive Physiology, and am a co-inventor on two issued patents, and two invention disclosures submitted to Brown University.

Papers, Books, etc. presented or published by your name

Complete Publications (Out of 23, 12 as first author, 3 as corresponding author)

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1H7vja3HWgyQ7/bibliography/41094926/public/?sort=date&direction=ascending>.

Invited Lectures

1. Gordon-Kenan Research Seminar - Carotenoids. Ventura, CA. Jan 2013.
2. The 2014 international Symposium on Carotenoids. Salt Lake City, UT. June 2014.
3. Vertex Pharmaceutical Inc. Providence, RI. 2021.
4. Society of Toxicology Annual Meeting. San Diego, CA. March 2022
5. Seoul National University. Seoul, South Korea. March 2024.
6. Revvity Inc. Boston, MA. 2024

Issued Patent Disclosure: Two issued patents on three-dimensions tissue engineering, and two invention disclosures.