

Curriculum Vitae – Blanche C. Ip, Ph.D.

1. Blanche C. Ip, Ph.D.

Assistant Professor (Research),
Department of Molecular Pharmacology, Physiology and Biotechnology
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Brown University
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3. EDUCATION

- 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.*

4. PROFESSIONAL APPOINTMENTS

- 2003-2005 Research Assistant, Department of Public Health, University of Toronto (G. Eysen); *Involved in epidemiological study on dietary factors in colon cancer; SAS programming on dietary intake assessments (data management and statistical analysis).*
- Summer 2003 Research Assistant, Department of Public Health, University of Toronto (Carol E. Greenwood); *Clinical study on brain function in relation to elderly food intake.*
- 2004-2005 Research Assistant, Department of Nutritional Sciences, University of Toronto (T.M.S. Wolever); *Analysis of plasma short-chain fatty acids and glycemic index of foods.*
- Jul 2014 – Apr 2015 Postdoctoral Fellow, Boston University, Microbiology (B. Nikolajczyk and G. Denis; NIH T32 NRSA Postdoctoral Fellow); *Examining lymphocytes inflammatory and metabolic phenotypes among obese non-diabetic and obese type 2 diabetic subjects.*
- Apr 2015 – June 2017 Postdoctoral Fellow, Brown University, Department of Molecular Pharmacology, Physiology and Biotechnology (J.R. Morgan); *Lead NSF-funded project, manage a technical team to build a semi-automated instrument to additively bioengineer large 3D human tissues and organoids (hundreds of millions of cells, particularly liver); collaborate with colleagues and mentor students to develop and execute novel mathematical modeling, biochemical (molecular cell biology and sensors based) and imaging (light and fluorescent microscopy, histology, immunohistochemistry) techniques for studying 3D cell/tissue function and drug metabolism.*

- June 2017 – Feb 2018 Visiting Scholar, Brown University, Division of Biology and Medicine
- June 2017 – Feb 2018 Director of Scientific Affairs, Natals, Inc. (DBA Ritual), Los Angeles, CA
- Feb 2018 – Present Assistant Professor (Research), Brown University, Department of Molecular Pharmacology, Physiology and Biotechnology

5. RESEARCH AND SCHOLARSHIP

Peer-Reviewed Journal Articles:

1. Wolever TM, **Ip B**, Moghaddam E, “Measuring glycaemic responses: duplicate fasting samples or duplicate measures of one fasting sample?” *British Journal of Nutrition*. 2006 Nov;96(5):799-802. Impact factor (2016): 3.706. DOI: [10.1017/BJN20061914](https://doi.org/10.1017/BJN20061914)
2. Matthan NR, Dillard A, Lecker JL, **Ip B**, Lichtenstein AH, “Effects of dietary palmitoleic acid on plasma lipoprotein profile and aortic cholesterol accumulation are similar to those of other unsaturated fatty acids in the F1B golden Syrian hamster.” *The Journal of Nutrition*. 2009 Feb;139(2):215-21. Impact factor (2016): 4.145. DOI: [10.3945/jn.108.099804](https://doi.org/10.3945/jn.108.099804)
3. Matthan NR, **Ip B**, Resteghini N, Ausman LM, Lichtenstein AH, “Long-term fatty acid stability in human serum cholesteryl ester, triglyceride, and phospholipid fractions.” *Journal of Lipid Research*. 2010 Sep;51(9):2826-32. Impact factor (2016): 4.810. DOI: [10.1194/jlr.D007534](https://doi.org/10.1194/jlr.D007534)
4. **Ip BC**, Hu KQ, Liu C, Smith DE, Obin MS, Ausman LM, Wang XD, “Lycopene metabolite, apo-10'-lycopenoic acid, inhibits diethylnitrosamine-initiated, high fat diet-promoted hepatic inflammation and tumorigenesis in mice.” *Cancer Prevention Research (Phila)*. 2013 Dec;6(12):1304-16. Impact factor (2016): 3.985. DOI: [10.1158/1940-6207.CAPR-13-0178](https://doi.org/10.1158/1940-6207.CAPR-13-0178).
5. **Ip BC**, Wang XD, “Non-alcoholic steatohepatitis and hepatocellular carcinoma: implications for lycopene intervention.” *Nutrients*. 2013 Dec 27;6(1):124-62. Impact factor (2016): 3.550. DOI: [10.3390/nu6010124](https://doi.org/10.3390/nu6010124).
6. Nascimento AF, **Ip BC**, Luvizotto RA, Seitz HK, Wang XD, “Aggravation of nonalcoholic steatohepatitis by moderate alcohol consumption is associated with decreased SIRT1 activity in rats.” *Hepatobiliary Surgery and Nutrition*. 2013 Oct;2(5):252-9. DOI: [10.3978/j.issn.2304-3881.2013.07.05](https://doi.org/10.3978/j.issn.2304-3881.2013.07.05).
7. **Ip BC**, Liu C, Smith DE, Ausman LM, Wang XD, “High-refined-carbohydrate and high-fat diets induce comparable hepatic tumorigenesis in male mice.” *The Journal of Nutrition*. 2014 May;144(5):647-53. Impact factor (2016): 4.145. DOI: [10.3945/jn.113.189613](https://doi.org/10.3945/jn.113.189613).
8. **Ip BC**, Liu C, Ausman LM, von Lintig J, Wang XD, “Lycopene attenuated hepatic tumorigenesis via differential mechanisms depending on carotenoid cleavage enzyme in mice.” *Cancer Prevention Research (Phila)*. 2014 Dec;7(12):1219-27. Impact factor (2016): 3.985. DOI: [10.1158/1940-6207.CAPR-14-0154](https://doi.org/10.1158/1940-6207.CAPR-14-0154).
9. **Ip BC**, Hogan AE, Nikolajczyk BS, “Lymphocyte roles in metabolic dysfunction: of men and mice.” *Trends in Endocrinology and Metabolism*. 2015 Feb;26(2):91-100. Impact factor (2016): 10.893. DOI: [10.1016/j.tem.2014.12.001](https://doi.org/10.1016/j.tem.2014.12.001).
10. **Ip BC**, Liu C, Lichtenstein AH, von Lintig J, Wang XD, “Lycopene and apo-10'-lycopenoic acid have differential mechanisms of protection against hepatic steatosis in β -carotene-9',10'-oxygenase knockout male mice.” *The Journal of Nutrition*. 2015 Feb;145(2):268-76. Impact factor (2016): 4.145. DOI: [10.3945/jn.114.200238](https://doi.org/10.3945/jn.114.200238).
11. Li X, Liu C, **Ip BC**, Hu KQ, Smith DE, Greenberg AS, Wang XD, “Tumor progression locus 2 ablation suppressed hepatocellular carcinoma development by inhibiting hepatic inflammation

- and steatosis in mice.” *Journal of Experimental and Clinical Cancer Research*. 2015 Nov 11;34:138. Impact factor (2016): 5.189. DOI: [10.1186/s13046-015-0254-2](https://doi.org/10.1186/s13046-015-0254-2).
12. Ip B, Cilfone NA, Belkina AC, DeFuria J, Jagannathan-Bogdan M, Zhu M, Kuchibhatla R, McDonnell ME, Xiao Q, Kepler TB, Apovian CM, Lauffenburger DA, Nikolajczyk BS, “Th17 cytokines differentiate obesity from obesity-associated type 2 diabetes and promote TNF α production.” *Obesity (Silver Spring)*. 2016 Jan;24(1):102-12. Impact factor (2016): 3.873. DOI: [10.1002/oby.21243](https://doi.org/10.1002/oby.21243).
 13. Ip BC, Cui F, Tripathi A, Morgan JR, “The bio-gripper: a fluid-driven micro-manipulator of living tissue constructs for additive bio-manufacturing.” *Biofabrication*. 2016 May 25;8(2):025015. Impact factor (2016): 5.240. DOI: [10.1088/1758-5090/8/2/025015](https://doi.org/10.1088/1758-5090/8/2/025015).
 14. Nicholas D, Proctor EA, Raval FM, Ip BC, Habib C, Ritou E, Grammatopoulos TN, Steenkamp D, Doms H, Apovian CM, Lauffenburger DA, Nikolajczyk BS, “Advances in the quantification of mitochondrial function in primary human immune cells through extracellular flux analysis.” *PLoS One*. 2017 Feb 8;12(2):e0170975. DOI: [10.1371/journal.pone.0170975](https://doi.org/10.1371/journal.pone.0170975).
 15. Bharath LP, Ip BC, Nikolajczyk BS. Adaptive Immunity and Metabolic Health: Harmony Becomes Dissonant in Obesity and Aging. *Comprehensive Physiology*. 2017 Sep 12;7(4):1307-1337. Impact factor (2016): 6.946. DOI: [10.1002/cphy.c160042](https://doi.org/10.1002/cphy.c160042).
 16. Cui F, Ip BC, Morgan JR and Tripathi A, “Hydrodynamics of the bio-gripper: a fluid driven ‘claw machine’ for micro-tissue translocation.” Accepted April 2018: *SLAS Technol*. 2018 Jun 1:2472630318775079. [Epub ahead of print]. DOI: [10.1177/2472630318775079](https://doi.org/10.1177/2472630318775079)
 17. Ip, BC, Cui, F., Wilks, B.T., Murphy III, J., Tripathi, A., Morgan, J.R. “Perfused Organ Cell-Dense Macrotissues Assembled from Pre-fabricated Living Microtissues.” First published 05 July 2018: *Advanced Biosystems*. DOI:10.1002/adbi.201800076.

Abstracts

1. Ip B, Nascimento AF, Luvizotto RAM, Wang Y, and Wang XD, “Possible mechanisms on the aggravation from moderate alcohol consumption in nonalcoholic steatohepatitis in rats.” *Experimental Biology Annual Meeting*, Washington DC. March 2011. (Poster)
2. Ip BC, Hu HQ, Liu C, Smith DE, Ausman LM, and Wang XD, “Lycopene metabolite, apo-10'-lycopenoic acid, inhibits diet-induced obesity-promoted liver carcinogenesis via the up-regulation of SIRT1 signaling and the decrease in liver inflammation.” *Gordon Research Conference on Carotenoids*, Ventura, CA. Jan 2013. (Oral and poster)
3. Ip BC, Hu HQ, Liu C, Smith DE, Ausman LM, and Wang XD, “Lycopene metabolite, apo-10'-lycopenoic acid, inhibits diet-induced obesity-promoted liver carcinogenesis via the up-regulation of SIRT1 signaling and the decrease in liver inflammation.” *Experimental Biology Annual Meeting*, Boston, MA. April 2013. (Oral and poster)
4. Ip BC, Hu HQ, Liu C, Smith DE, Ausman LM, and Wang XD, “Lycopene metabolite, apo-10'-lycopenoic acid, inhibits diet-induced obesity-promoted liver carcinogenesis via the up-regulation of SIRT1 signaling and the decrease in liver inflammation.” Tufts Cancer Center Symposium. Boston, MA. June 2013. (Poster)
5. Ip BC, Liu C, Smith DE and Wang XD, “High refined carbohydrate and high fat diets induced comparable hepatic tumorigenesis in male mice.” *Tufts University Future of Food and Nutrition Conference*. Boston, MA. March 2013. (Oral)
6. Ip BC, Liu C, Smith DE, von Lintig J, and Wang XD, “Lycopene supplementation inhibited high-fat diet-promoted hepatic tumorigenesis in both wild-type and beta-carotene-9',10'-oxygenase knockout mice (123.1).” *Experimental Biology Annual Meeting*, San Diego, CA. April 2014. (Oral and poster)

7. **Ip BC**, Liu C, Smith DE and Wang XD, "High refined carbohydrates diet promotes comparable hepatic tumorigenesis in mice as high fat diet, potentially through inducing endoplasmic reticulum stress PKR-like kinase signaling (1029.1)" **Experimental Biology Annual Meeting**, San Diego, CA. April 2014. (Poster)
8. **Ip BC**, Liu C, Smith DE, von Lintig J, and Wang XD, "Lycopene and its metabolite apo-10'-lycopenoic acid suppressed high-fat diet-induced hepatic steatosis in beta-carotene-9',10'-oxygenase knockout mice (39.3)" **Experimental Biology Annual Meeting**, San Diego, CA. April 2014. (Oral and poster)
9. **Ip BC**, Liu C, Smith DE, von Lintig J, and Wang XD, "Lycopene supplementation inhibits high saturated-fat diet-promoted hepatic tumorigenesis via differential mechanisms depending on beta-carotene-9',10'-oxygenase expression in mice" **The 2014 international Symposium on Carotenoids**. Salt Lake City, UT. June 2014. (Oral and poster)
10. Li X, Liu C, Stice C, **Ip BC**, Hu HQ, Greenberg AS, and Wang XD, "Tumor Progression Locus 2 Depletion Inhibits Hepatic Inflammation and Steatosis and Incidence of Hepatocellular Carcinoma." **Experimental Biology Annual Meeting**, Boston, MA. April 2015. (Poster)
11. **Ip B**, Cilfone N, Zhu M, Kuchibhatla R, Azer M, McDonnell M, Apovian C, Lauffenburger D and Nikolajczyk B, "An inflammatory T cell signature predicts obesity-associated type 2 diabetes" **The American Association of Immunologists Annual Meeting**, New Orleans, LA. May 2015. (Poster)
12. **Ip BC**, Cui F, Murphy J, Wilks BT, Manning KL, Susienka MJ, Bull C, Patterson III WR, Tripathi A and Morgan JR, "Bio-Pick, Place, and Perfuse instrument for building perfusable large proto-organs." **International Society of Biofabrication Conference**, Winston-Salem, NC. October 2016. (Oral)
13. **Ip BC**, Cui F, Murphy J, Wilks BT, Manning KL, Susienka MJ, Bull C, Patterson III WR, Tripathi A and Morgan JR, "Bio-Pick, Place, and Perfuse instrument for building perfusable large proto-organs." **TERMIS – Americas Annual Conference**, San Diego, CA. December 2016. (Interactive poster)

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.

Provisional Patent Disclosure:

6. RESEARCH GRANTS

A. Current Grants

COBRE CCRD Pilot Grant 2018 (PI: B.C. Ip)

08/2018 – 07/2020

COBRE grant P30GM110759/ 701-7137398 – Pilot grants for Early Stage Investigators:

Perfusable 3D human cancer co-culture model for liver fibrosis and chemotherapeutic efficacy

The objective of this project is to develop and utilize a perfusable *in vitro* platform to investigate how liver fibrosis may impact the efficacy of FDA-approved chemotherapies for HCC.

Total Award Amount: **\$100,000**.

B. Completed Grants:

None

C. Proposals Submitted:

L'Oréal USA For Women in Science Fellowships

Title: "Breaking the Size Barrier: Engineering Macro-scaled 3D Tissues for Drug Testing"

Project Period: 10/01/16 – 09/30/17

PI: Ip

Total Award Amount: **\$60,000**

7. SERVICE

A. Service to the University

Volunteering Research Assistant, *University of Toronto Department of Public Health*. 2004 - 2005

Discussion Leader, *Tufts University Friedman School Graduate Journal Club*. 2011 - 2012

Instructor, *Science Education Partnership Award (NIH - Tufts School of Medicine)*. 2013

Member, *Tufts University Friedman Alumni Executive Council*. September 2014 - present

Co-chair, *Tufts University Friedman Alumni Executive Council – Mentoring*. April 2016 - present

Member, *Brown University Postdoc Advisory Panel*. April 2015 - June 2017

B. Service to the Profession

Postdoctoral Representative: American Society of Nutrition Obesity Research Interest Section. 2014 - 2015

Session Co-Chair: Experimental Biology Annual Meeting, Boston, MA. April 2015.

Manuscript Referee: *Annals of Biomedical Engineering, Cellular and Molecular Bioengineering*

8. ACADEMIC HONORS, FELLOWSHIPS AND HONORARY SOCIETIES

USDA-HNRC Graduate Research Fellowship (4 Years of Support)	Sept 2010-Sept 2012
NIH/NHLBI Ruth L. Kirschstein NRSA Predoctoral Trainee (5T32HL069772-10)	Jul 2012-Jun 2014
Gordon Research Seminar on Carotenoids – Invited Speaker	Jan 2013
Gordon Research Conference on Carotenoids, Award for Exceptional Poster	Jan 2013
Experimental Biology 2013, Diet and Cancer RIS, Poster Award	April 2013
Experimental Biology 2014, ASN Obesity RIS – Poster Award	April 2014
Experimental Biology 2014, ASN SIG – Poster Award	April 2014
International Carotenoids Society Utah 2014 First Place for Outstanding Oral Presentation	Jul 2014
NIH/NIA Ruth L. Kirschstein NRSA Postdoctoral Trainee (5T32AI007309-25)	Jul 2014-Apr 2015
Student Commencement Speaker, Friedman School of Nutrition, Tufts University	May 2014
M.L.M. Dallas Prize, Tufts University (<i>exemplary Ph.D. research related to cancer</i>)	May 2014
I.H. Rosenberg Award, Tufts University (<i>most outstanding Ph.D. thesis in graduating class</i>)	May 2014

9. TEACHING

A. Regular Courses:

Fall 2011-Spring 2012. NUTR 240: Nutrition Science Journal Club (Graduate)
Discussion Leader

Fall 2011. BCHM230 Graduate Biochemistry (Graduate)
Teaching Assistant (3 of 4 modules)

Spring 2012. NUTR 371: Nutritional Biochemistry and Physiology: Micronutrients (Graduate)
Teaching Assistant

Fall 2012. BCHM230 Graduate Biochemistry (Graduate)
Teaching Assistant (3 of 4 modules)

Fall 2012. MPH 265 - Introduction to SAS (Graduate)
Teaching Assistant

Spring 2013. NUTR 371: Nutritional Biochemistry and Physiology: Micronutrients (Graduate)
Teaching Assistant

Spring 2013. NU 101 Introductory Human Nutrition (Undergraduate)
Teaching Assistant
Guest Lecture (1 h); April 2013

Fall 2013. BCHM230 Graduate Biochemistry (Graduate)
Teaching Assistant (1 of 4 modules)

Fall 2013. NUTR 370: Nutritional Biochemistry and Physiology: Macronutrients (Graduate)
Teaching Assistant

Fall 2013. NUTR202 Human Nutrition (Graduate)
Teaching Assistant;
Guest Lecture (2 h); November 2013

Fall 2013. MPH 265 - Introduction to SAS (Graduate)
Teaching Assistant
Guest Lecture (3 h); October 2013

Fall 2013. Science Education Partnership Award (NIH - Tufts School of Medicine)
Instructor

Spring 2014. NU 101 Introductory Human Nutrition (Undergraduate)
Guest Lecture (1 h); April 2013

D. Honors, Master's and Ph.D. Theses Directed:

i. Undergraduates

Name	Recognitions
Joy Jiang	Team UTRA 2016
Andrew Thomson	Team UTRA 2016

Maryam Ahmad	Team UTRA 2016
Morcos Nakhla	UTRA 2016
Itzel Aponte	UTRA 2018
Bruno Felalaga	UTRA 2018