

**AMANDA J. MACFARLANE, Ph.D.**

**Director**

**Texas A&M Agriculture, Food and Nutrition Evidence Center**

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**PROFESSIONAL EXPERIENCE**

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**Director**

2022-present Agriculture, Food and Nutrition Evidence Center, Texas A&M AgriLife Research, Fort Worth, TX

**Professor**

2022-present Department of Nutrition, Texas A&M University, College Station, Texas  
Fort Worth, TX

**Research Scientist IV**

2020 - 2022 Nutrition Research Division, Bureau of Nutritional Sciences, Health Canada, Ottawa, ON

**Head, Micronutrient Research Section**

2014 - 2022 Nutrition Research Division, Bureau of Nutritional Sciences, Health Canada, Ottawa, ON

**Research Scientist III**

2013 - 2020 Nutrition Research Division, Bureau of Nutritional Sciences, Health Canada, Ottawa, ON

**Research Scientist II**

2008 - 2013 Nutrition Research Division, Bureau of Nutritional Sciences, Health Canada, Ottawa, ON

**Adjunct Professor**

2010 - present Dept. Biology, Carleton University, Ottawa, ON

**Adjunct Professor**

2009 - 2020 Dept. Biochemistry, Microbiology and Immunology, University of Ottawa, Ottawa, ON

**Research Associate**

2007 – 2008 Division of Nutritional Sciences, Cornell University, Ithaca, NY

**Post-Doctoral Research Associate**

2004 – 2007 Division of Nutritional Sciences, Cornell University, Ithaca, NY

**Post-Doctoral Research Associate**

2004 Ottawa Health Research Institute, Ottawa, ON

**EDUCATION**

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**Ph.D. in Biochemistry**

2000 – 2004 University of Ottawa, Ottawa, Ontario

**B.Sc. Highest Honours in Biology and Biotechnology**

1996 – 2000 Carleton University, Ottawa, Ontario

**HONOURS & AWARDS**

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2022 Assistant Deputy Minister's Award for Excellence in Science – NUQUEST Development Team (Team Lead)

- 2022 Food Directorate Excellence Award in Science 2021– NUQUEST Development Team (Team Lead)
- 2019 Named to the Canadian Institutes of Health Research College of Reviewers
- 2017 Deputy Minister’s Award for Excellence in Science – New DRI Framework Team (with Linda Greene-Finestone)
- 2015 Assistant Deputy Minister’s Award for Transparency and Openness for The Dietary Reference Intakes Nomination Process Team (Team lead)
- 2010 Outstanding Poster Prize, Federal Food Safety and Nutrition Research Meeting
- 2006 FASEB Summer Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism, Travel Award (\$600)
- 2002 & 2003 University of Ottawa Strategic Areas of Development Award (\$6,000 per annum)
- 2002 University of Ottawa Admission Scholarship - Ph.D. Graduate Studies (\$10,860)
- 2001-2004 Ontario Ministry of Training, Colleges and Universities, Ontario Graduate Scholarship (\$15,000 per annum)
- 2001-2004 University of Ottawa Excellence Scholarship (\$5,235 per annum)
- 2001 & 2004 University of Ottawa, Department of Biochemistry Travel Grant (\$1,000 per award)
- 2002 & 2004 University of Ottawa, Faculty of Graduate and Postdoctoral Studies Travel Grant (\$400 per award)
- 2003 Juvenile Diabetes Research Foundation Ron Oelbaum Diabetes Research Award for an Outstanding Canadian Research Scientist under 35 (\$2,000)
- 2000 Carleton University NSERC Undergraduate Student Research Award (declined) (\$4,500)
- 2000 Carleton University Dean’s list
- 2000 Canadian Millennium Scholarship Foundation Scholarship (\$3,000)
- 1996 Carleton University Academic Award (\$500)

## **FUNDING**

### **Current**

- 2023-2025 *Co-Principal Investigator*. Systematic approach to evaluate nutrition biomarkers for maternal and child health outcomes. PI: Patrick Stover. Bill and Melinda Gates Foundation. \$1.299M USD
- 2022-2027 *Principal Investigator*, Texas A&M AgriLife Research institutional startup funds, \$1.2M over 5 years
- 2022-2026 *Collaborator*. The interplay of early life exposure to environmental pollutants and folate in the etiology of autistic behaviors. PI: Youssef Oulhote. US National Institutes of Health, \$3.05M USD
- 2021-2026 *Co-investigator*. The maternal gut microbiome as a target to prevent fetal spina bifida. PIs: Kristin Connor, Tim Van Mieghem. Canadian Institutes of Health Research, \$761,175
- 2021-2026 *Co-investigator*. Implication of early embryonic epigenetic dysregulation in fetal alcohol spectrum disorders-associated outcomes. PI: Serge McGraw. Canadian Institutes of Health Research, \$826,200
- 2021-2024 *Co-Principal investigator*. Folate and vitamin B12 and global health - evaluation of policies informed by integrated assessment of health effects. Nominated PI: Julian Little. Canadian Institutes of Health Research, \$474,299

- 2020-2023 *Co-investigator*. The utilization, safety, and effectiveness of periconceptional high dose folic acid supplementation. PI: Azar Mehrabadi. Canadian Institutes of Health Research, \$233,324
- 2017-2023 *Principal Investigator*, MIREC: Folate status in pregnancy and its relationship to pregnancy and offspring development. Health Canada A-Base (cumulative annual operating budget), \$140,000
- 2009-2023 *Principal Investigator*, Effect of parental folic acid intake on chronic disease. Health Canada A-Base (cumulative annual operating budget), \$893,686

### **Completed**

- 2017-2018 *Co-investigator*, Periconceptional intake of folic acid among low-risk women: aligning prenatal supplement content with current expert guidelines. PI: Benedicte Fontaine-Bisson. Canadian Institutes of Health Research Planning and Dissemination Grant, \$19,644
- 2016-2021 *Co-investigator*, Team grant: DOHaD – Implications for Men, Women, Boys and Girls: Generational and sex-specific effects of paternal environmental exposures on offspring development health. PI: Sarah Kimmins. Canadian Institutes of Health Research, \$1.5 million over 5 years.
- 2015-2020 *Co-Principal Investigator*, Team grant: Boy's and Men's Health: Father's lasting influence: Molecular foundations of intergenerational transmission of the paternal environment. Nominated PI: Janice Bailey. Canadian Institutes of Health Research, \$1.49 million over 5 years.
- 2015-2016 *Principal Investigator*, MIREC: Unmetabolized folic acid and total folate content in breast milk. Health Canada A-Base (annual operating budget), \$39,000
- 2014-2015 *Co-Principal Investigator*, Team grant: Boy's and Men's Health LOI: Father's lasting influence: Molecular foundations of intergenerational transmission of the paternal environment. PI: Janice Bailey. Canadian Institutes of Health Research, \$10,000.
- 2012-2016 *Principal Investigator*, B vitamin analyses using the Canadian Health Measures Survey. Health Canada A-Base (cumulative annual operating budget), \$22,000
- 2011-2014 *Co-investigator*. The modifying effect of genetic polymorphisms involved in folate and B12 metabolism on the relationship between folate/B12 intake and vitamin status. Public Health Agency of Canada Genomics R&D Initiative, \$243,000
- 2009-2015 *Collaborator*, FACT: Folic Acid Clinical Trial, Canadian Institutes of Health Research, \$6.4M
- 2008-2011 *Principal Investigator*, Effect of folate on inflammation-mediated colon cancer. Health Canada A-Base (cumulative annual operating budget), \$149,000
- 2008-2009 *Principal Investigator*, Health Canada, Internal equipment budget, \$30,000

### **PATENTS**

#### **Canadian, US and European Patent Applications**

##### *Diabetogenic Epitopes*

Inventors: Fraser W. Scott, **Amanda J. MacFarlane**, Karolina M. Burghardt, Majid Mojibian  
 European patent EP1711604  
 Canadian patent application CA 2452162  
 United States patent application 20070185021

**PUBLICATIONS**

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**Bibliography:** <https://www.ncbi.nlm.nih.gov/myncbi/1-yxlu4umKA5Y/bibliography/public/>**Peer-reviewed articles in press or published** (underline indicates my trainee or staff;  
\*\*indicates seminal work)

1. St-Laurent, A., A.-S. Plante, S. Lemieux, J. Robitaille, **A.J. MacFarlane**, A.-S. Morisset. Higher than recommended folic acid intakes is associated with high folate status throughout pregnancy in a prospective French-Canadian Cohort. *J Nutr*. 2023 Feb 26:S0022-3166(23)12718-0. Online ahead of print. <https://doi.org/10.1016/j.tjnut.2023.02.027>
2. Breton-Larrivée, M., E. Elder, L.-M. Legault, A. Langford-Avelar, **A.J. MacFarlane**, S. McGraw. Mitigating the detrimental developmental impact of early fetal alcohol exposure using a maternal methyl donor-enriched diet. *FASEB J*. 37(4):e22829. 2023. <https://doi.org/10.1096/fj.202201564R>
3. Wang, L., X. Li, A. Montazeri, **A.J. MacFarlane**, F. Momoli, S. Duthie, M. Senekal, I.M. Eguiagaray, R. Munger, D. Bennett, H. Campbell, M. Rubini, H. McNulty, J. Little, E. Theodoratou. Phenome-wide association study of genetically predicted B vitamins and homocysteine biomarkers with multiple health and disease outcomes: analysis of the UK Biobank. *Amer J Clin Nutr* 117(3):564-575. 2023.
4. Charest, P.L., E. Tessougue, M. Lessard, P.M. Herst, P. Navarro, S. Kimmins, J.M. Trasler, **A.J. MacFarlane**, M.-O. Benoit-Biancamano, J.L. Bailey, M. Dalvai. Exposure to environmental contaminants and folic acid supplementation intergenerationally impact fetal skeleton development through the paternal lineage in a rat model. *Front Toxicol* 4:881622. 2022.
5. Ahuja; J.K.C., K.O. Casavale; Y. Li; K.E. Hopperton, S. Chakrabarti; E. Hines; S.P.J. Brooks; G.S. Bondy; **A.J. MacFarlane**; H.A. Weiler; X. Wu; M.M. Borghese; N. Ahluwalia; W. Cheung; A.J. Vargas; S. Arteaga; T. Lombo; M.M. Fisher; D. Hayward; P.R. Pehrsson. Perspective: Human milk composition and related data for national health and nutrition monitoring and related research. *Adv Nutr* 13(6):2098-2114. 2022.
6. Patti, M.A., K.T. Kelsey, **A.J. MacFarlane**, G.D. Papandonatos, T.E. Arbuckle, J. Ashley-Martin, M. Fisher, W.D. Fraser, B.P. Lanphear, G. Muckle, and J.M. Braun. Maternal Folate Status and the Relation between Gestational Arsenic Exposure and Child Health Outcomes. *Int J Environ Res Public Health* 19(18):11332. 2022.
7. Lismer, A, X. Shao, M.C. Dumargne, C. Lafleur, R. Lambrot, D. Chan, G. Toft, J.P. Bonde, **A.J. MacFarlane**, R. Bornman, N. Aneck-Hahn, S. Patrick, J.L. Bailey, C. de Jager, V. Dumeaux, J.M. Trasler, and S. Kimmins. Exposure of Greenlandic Inuit and South African VhaVenda men to the persistent DDT metabolite is associated with an altered sperm epigenome at regions implicated in paternal epigenetic transmission and developmental disease – a cross-sectional study. *bioRxiv* 2022.08.15.504029; doi: <https://doi.org/10.1101/2022.08.15.504029>.
8. Patti, M.A., J.M. Braun, **A.J. MacFarlane**. Associations between folic acid supplement use and folate status biomarkers in the first and third trimesters of pregnancy in the MIREC pregnancy cohort study. *Am J Clin Nutr*. 116(6):1852-1863. 2022.
9. DeSilva, D.M., J.M. de Jesus, K.E. Friedl, S. Yamini, C.D. Davis, G. Butera, **A.J. MacFarlane** on behalf of the Joint Federal Canada-US Dietary Reference Intakes Working Group. Finding the right evidence: The role of evidence scans in the review of the Dietary Reference Intakes. *J Nutr* 152(8):1819-1822. 2022.

10. Munezero, E., N.A. Behan, S. Diaz G., E.-M. Neumann, A.J. MacFarlane. Poor reporting quality in basic nutrition research: A case study based on a scoping review of recent folate research in mouse models (2009-2021). *Adv Nutr.* 2022 Jul 12:nmac056. doi: 10.1093/advances/nmac056. Online ahead of print.
11. Dwyer, E.R., K.B. Fillion, **A.J. MacFarlane**, R.W. Platt, A. Mehrabadi. Who should consume high-dose folic acid supplements prior to and during early pregnancy for the prevention of neural tube defects? *BMJ*, 377:e067728. 2022.
12. West, Z., I. Demchenko, L. Clark, M. White, **A.J. MacFarlane**, W.D. Fraser, T.E. Arbuckle, K.L. Connor, the MIREC Study Group. Complex interplay of maternal body mass index, early environments, and child cognitive outcomes at three years of age in a prospective Canadian birth cohort. *J Dev Orig Health Dis.* 2022 Apr 28:1-11. Epub ahead of print.
13. Kelly, S.E., L.S. Greene-Finestone, E.A. Yetley, K. Benkhedda, S.P.J. Brooks, G.A. Wells, **A.J. MacFarlane**. NUQUEST – NUtrition QUality Evaluation Strengthening Tools: Development of tools for the evaluation of risk of bias in nutrition studies. *Am J Clin Nutr* 115(1):256-271. 2022.  
\*\*\*Team lead on the development of a suite of nutrition study specific risk of bias tools for the evaluation of single studies and studies included in systematic reviews.
14. Sorkin, J.D., M. Manary, P.A.M. Smeets, **A.J. MacFarlane**, A. Astrup, R.L. Prigeon, B.B. Hogans, J. Odle, T.A. Davis, K.L. Tucker, C.P. Duggan, D.K. Tobias. Reply to Verhoef et al, *Am J Clin Nutr* 115(2): 598–600. 2022.
15. Christensen, K.E., O.V. Malysheva, S. Carlin, F. Matias, **A.J. MacFarlane**, R.L. Jacobs, M.A. Caudill, R. Rozen. Mild choline deficiency and MTHFD1 synthetase deficiency interact to increase incidence of delays and defects in mice. *Nutrients* 14(1): 127. 2021.
16. Sorkin, J.D., M. Manary, S. Li4, P.A.M. Smeets, **A.J. MacFarlane**, A. Astrup, R.L. Prigeon, B.B. Hogans, J. Odle, T.A. Davis, K.L. Tucker, C.P. Duggan, D. Tobias. A guide for authors and readers of the American Society for Nutrition Journals on the proper use of P values and strategies that promote transparency and improve research reproducibility. *Am J Clin Nutr.* 114(4):1280-1285. 2021.
17. Musa-Veloso, K., M. Racey, **A. MacFarlane**, D. Bier, B. Lamarche, P. Trumbo, J. House. Challenges in the Design, Interpretation, and Reporting of Randomized Controlled Clinical Studies on the Health Effects of Whole Foods. *Appl Physiol Nutr Metab* 46(9):1152-1158. 2021.
18. Navarro, P., M. Dalvai, P.L. Charest, P.M. Herst, M. Lessard, B. Marcotte, N. Leblanc, S. Kimmins, J. Trasler, **A.J. MacFarlane**, A. Marette, J.L. Bailey and H. Jacques. Prenatal exposure to persistent organic pollutants and maternal folic acid supplementation: their impact on glucose homeostasis in male rat descendants. *Environments* 8(3): 24. 2021.
19. **MacFarlane, A.J.**, Hyperhomocysteinemia in patients with cardiovascular manifestations: To treat or not to treat. *Am J Clin Nutr* 113(5): 1081-1082. 2021.
20. Rose, E.G., M.S.Q. Murphy, E. Erwin, K.A. Muldoon, A.L.J. Harvey, R. Rennicks White, **A.J. MacFarlane**, S.W. Wen, M.C. Walker. Gestational folate and folic acid intake among women in Canada at higher risk for pre-eclampsia. *J Nutr* 151(7):1976-1982. 2021.
21. Racey, M., **A. MacFarlane**, S.E. Carlson, K.D. Stark, M. Plourde, C.J. Field, A.A. Yates, G. Wells, A. Grantham, R.P. Bazinet, D.W.L. Ma. Dietary Reference Intakes Based on Chronic Disease Endpoints: Outcomes from a case study workshop for omega 3's EPA and DHA. *Appl Physiol Nutr Metab* 46(5):530-539. 2021.
22. Murphy, M.S.Q., K.A. Muldoon, H. Sheyholislami, N. Behan, Y. Lamers, N. Rybak, R. Rennicks White, A.L.J. Harvey, L.M. Gaudet, G.N. Smith, M.C. Walker, S.W. Wen, **A.J. MacFarlane**. Impact of high-dose folic acid supplementation in pregnancy on biomarkers of

folate status and one-carbon metabolism: An ancillary study of the Folic Acid Clinical Trial (FACT). *Am J Clin Nutr* 113(5): 1361-1371. 2021.

\*\*\**First in a suite of studies in pregnant individuals examining the relationships among high dose folic acid intake, folate status and individual circulating folate vitamers, including unmetabolized folic acid. These studies make the case that high dose folic acid, especially in the context of folic acid fortification, is supraphysiological. With no known benefit, and some concern for risk, these observations support a refinement of folic acid supplement recommendations for individuals with no known risk factor for a neural tube defect affected pregnancy (see also Dwyer et al 2022, and Patti et al, and St-Laurent et al in submitted manuscripts).*

23. Diaz G., S., D. LeBlanc, R. Gagne, N.A. Behan, A. Wong, F. Marchetti, A.J. MacFarlane. Folate intake alters mutation frequency and profiles in a tissue- and dose-specific manner in MutaMouse male mice. *J Nutr.* 151(4): 800–809. 2021.  
\*\*\**First study demonstrating the tissue and dose-dependent effects of folate intakes on DNA mutagenesis providing an explanation for differential associations of folate with cancers in different tissues.*
24. Maruvada P, Stover PJ, Mason JB, Bailey RL, Davis CD, Field MS, Finnell RH, Garza C, Green R, Gueant JL, Jacques PF, Klurfeld DM, Lamers Y, **MacFarlane AJ**, Miller JW, Molloy AM, O'Connor DL, Pfeiffer CM, Potischman NA, Rodricks JV, Rosenberg IH, Ross SA, Shane B, Selhub J, Stabler SP, Trasler J, Yamini S, Zappalà G. Knowledge gaps in understanding the metabolic and clinical effects of excess folates/folic acid: a summary, and perspectives, from an NIH workshop. *Am J Clin Nutr* 112(5):1390-1403. 2020.
25. Mikwar, M., A.J. MacFarlane, F. Marchetti. Mechanisms of oocyte aneuploidy associated with advanced maternal age. *Mutation Research –Reviews in Mutation Research* 785:108320. 2020.
26. Chaudhry, S.H., M. Taljaard, **A.J. MacFarlane**, L.M. Gaudet, G.N. Smith, M. Rodger, R. Rennicks White, M.C. Walker, S.W. Wen. The determinants of maternal homocysteine in pregnancy: Findings from the Ottawa and Kingston Birth Cohort. *Public Health Nutr* 19:1-11. 2020.
27. Oulhote, Y., B. Lanphear, J.M. Braun, G.M. Webster, T.E. Arbuckle, T. Etzel, N. Forget-Dubois, J.R. Seguin, M.F. Bouchard, **A.J. MacFarlane**, E. Ouellet, W. Fraser, G. Muckle. Gestational exposures to phthalates and folic acid, and autistic traits in Canadian children. *Environmental Health Perspectives* 128(20): 27004. 2020.
28. Navarro, P., M. Dalvai, P.L. Charest, P.M. Herst, M. Lessard, B. Marcotte, P. Mitchell, N. Leblanc, S. Kimmins, J. Trasler, **A.J. MacFarlane**, A. Marette, J.L. Bailey and H. Jacques. Maternal folic acid supplementation does not counteract the deleterious impact of prenatal exposure to environmental pollutants on lipid homeostasis in male rat descendants. *J Dev Orig Health Dis.* 11(4): 427-437. 2020.
29. Herst, P.M., M. Dalvai, M. Lessard, P.L. Charest, P. Navarro, C. Joly-Beauparlant, A. Droit, J.M. Trasler, S. Kimmins, **A.J. MacFarlane**, MO. Benoit-Biancamano, and J.L. Bailey. Folic acid supplementation reduces multigenerational sperm miRNA perturbation induced by in utero environmental contaminant exposure. *Environmental Epigenetics* 5(4): dvz024. 2019.
30. Lessard, M., P.M. Herst, P.L. Charest, P. Navarro, C. Joly-Beauparlant, A. Droit, S. Kimmins, J. Trasler, M.-O. Benoit-Biancamano, A.J. MacFarlane, M. Dalvai, J.L. Bailey. Prenatal Exposure to Environmentally-Relevant Contaminants Perturbs Male Reproductive Parameters Across Multiple Generations that are Partially Corrected by Folic Acid Supplementation. *Scientific Reports* 9 Article number: 13829. 2019.

31. Page, R., A. Wong, T. Arbuckle, and **A.J. MacFarlane**. The *MTHFR* 677C>T polymorphism is associated with unmetabolized folic acid in breast milk in a cohort of Canadian women. *Am J Clin Nutr* 110(2): 401-409. 2019.  
\*\*\**First study to demonstrate associations between common SNPs in folate-dependent enzymes and breast milk total folate and individual folate vitamers.*
32. Rahimi, S., J. Martel, G. Karahan, D. Chan, C. Angle, N.A. Behan, **A.J. MacFarlane**, J.M. Trasler. Impact of maternal folic acid supplementation in assisted reproduction on embryonic outcomes and epigenetic patterning. *Hum Reprod* 34(5): 851-862. 2019.
33. Liu, S., J. Evans, **A.J. MacFarlane**, C.V. Ananth, J. Little, M.S. Kramer, K.S. Joseph for the Canadian Perinatal Surveillance System. Association of maternal risk factors with the recent rise of neural tube defects in Canada. *Paediatr Perinat Epidemiol* 33(2): 145-153. 2019.
34. Chaudhry, S.H., M. Taljaard, **A.J. MacFarlane**, L.M. Gaudet, G.N. Smith, M. Rodger, R. Rennicks White, M.C. Walker, S.W. Wen. The role of maternal homocysteine concentration in placenta-mediated complications: findings from the Ottawa and Kingston birth cohort. *BMC Pregnancy Childbirth* 19(1):75. 2019.
35. **MacFarlane, A.J.**, M.E. Cogswell, J. de Jesus, L. Greene-Finestone, D.M. Klurfeld, C.J. Lynch, K. Regan, S. Yamini. A report of activities related to the Dietary Reference Intakes from the Joint Canada-US Dietary Reference Intakes Working Group. *Am J Clin Nutr* 109: 1-9. 2019.
36. Lowry, R.B., T. Bedard, **A.J. MacFarlane**, S. Crawford, B. Sibbald, B.C. Agborsangaya. Prevalence rates of Spina Bifida in Alberta, Canada: 2001-2015. Why can't we do better with prevention? *Birth Defects Research* 111(3): 151-158. 2019.
37. Lamers, Y., **A.J. MacFarlane**, D.L. O'Connor, B. Fontaine-Bisson. Periconceptional intake of folic acid among low-risk women: summary of a workshop aiming to align prenatal folic acid supplement composition with current expert guidelines. *Am J Clin Nutr* 108(6):1357-1368. 2018.  
\*\*\**Co-organizer of this national workshop that brought together stakeholders from government, industry, academia and health professionals to discuss the issues around recommending high dose folic acid to individuals at low risk for a neural tube defect-affected pregnancy. Direct outcomes of this workshop included industry stakeholders choosing to reformulate their prenatal supplements to lower folic acid doses and a voluntary statement permitted by Health Canada to be added to folic acid containing prenatal supplements promoting the consumption of lower folic acid intakes by individuals at lower risk for a neural tube defect-affected pregnancy.*
38. Jadavji, N.M., J.T. Emmerson, U. Shanmugalingam, **A.J. MacFarlane**, W.G. Willmore, P.D. Smith. A genetic deficiency in folic acid metabolism impairs recovery after ischemic stroke. *Exp Neurol* 309:14-22. 2018.
39. LeBlanc, D., N. Behan, J.M. O'Brien, F. Marchetti, **A.J. MacFarlane**. Folate deficiency increases chromosomal damage and mutations in hematopoietic cells in the transgenic MutaMouse model. *Environ Mol Mutagen.* 59(5):366-374. 2018.  
\*\*\**One of a series of papers examining the effect of inadequate and supplemented folate intakes on genome stability (DNA mutagenesis and chromosome breakage/loss) in somatic and germline cells. (See also Diaz et al 2021, MacFarlane et al 2015, Swayne et al 2012a, Swayne et al 2012b).*
40. Ly, L., D. Chan, M. Aarabi, M. Landry, N. Behan, **A.J. MacFarlane**, J. Trasler. Intergenerational impact of paternal lifetime exposures to both folic acid deficiency and supplementation on reproductive outcomes and imprinted gene methylation. *Mol Hum Reprod* 23(7):461-477. 2017.

41. Page, R., A. Robichaud, T. Arbuckle, W. Fraser and **A.J. MacFarlane**. Total folate and unmetabolized folic acid in the breast milk of a cross-section of Canadian women. *Am J Clin Nutr* 105(5):1101-1109. 2017.  
*\*\*\*The largest study to examine the relationship between supplemental folic acid intake and total folate and individual folate vitamers, including unmetabolized folic acid, in human milk. We demonstrated for the first time that unmetabolized folic acid becomes the predominant vitamer in milk when higher than recommended doses of folic acid are consumed.*
42. Jadavji, N.M., J.T. Emmerson, **A.J. MacFarlane**, W.G. Willmore, P.D. Smith. B-vitamin and choline supplementation increases neuroplasticity and recovery after stroke. *Neurobiol Dis* 103:89-100. 2017.
43. Yetley E.A., **A.J. MacFarlane**, L.S. Green-Finestone, B.G. Garza, et al. Options for basing Dietary Reference Intakes (DRIs) on chronic disease endpoints: Report from a Joint US/Canadian-sponsored working group. *Am J Clin Nutr* 105(1): 249S-285S. 2017.  
*\*\*\*Corresponding author of this seminal paper illuminating the scientific issues (evidentiary issues, establishment of causal and dose-response relationships) that had prevented the formal incorporation of chronic disease endpoints into the Dietary Reference Intakes framework. This work was the foundational resource used by a National Academies of Sciences, Engineering and Medicine committee to establish the Guiding Principles for the Inclusion of Chronic Disease Endpoints in Future Dietary Reference Intakes.*
44. Lévesque N., K.E. Christensen, L. Van Der Kraak, A.F. Best, L. Deng, D. Caldwell, **A.J. MacFarlane**, N. Beauchemin, R. Rozen. Murine MTHFD1-synthetase deficiency, a model for the human MTHFD1 R653Q polymorphism, decreases growth of colorectal tumors. *Mol Carcinog* 56(3):1030-1040. 2017.
45. **MacFarlane, A.J.** The elephant in the room: Using nutritional biomarker cut-offs to assess status. *Am J Clin Nutr* 104(6): 1493-1494. 2016.
46. Shen M., S.H. Chaudhry, **A.J. MacFarlane**, L. Gaudet, G.N. Smith, M. Rodger, R.R. White, M.C. Walker, S.W. Wen. Serum and red-blood-cell folate demonstrate differential associations with BMI in pregnant women. *Public Health Nutr* 18:1-8. 2016.
47. Ahmed, T., I. Fellus, J. Gaudet, **A.J. MacFarlane**, B. Fontaine-Bisson, S. Bainbridge. Effect of folic acid on human trophoblast health and function in vitro. *Placenta* 37: 7-15. 2016.
48. Xie, R.H., Y.J. Liu, R. Retnakaran, **A.J. MacFarlane**, J. Hamilton, G. Smith, M.C. Walker, S.W. Wen. Maternal folate status and obesity/insulin resistance in the offspring: A systematic review. *Int J Obes (Lond)* 40(1): 1-9. 2016.
49. Chan Y.-M., **A.J. MacFarlane**, D.L. O'Connor. Modeling demonstrates that folic acid fortification of whole wheat flour could reduce the prevalence of folate inadequacy in Canadian whole-wheat consumers. *J Nutr* 145(11):2622-9. 2015.  
*\*\*\*This collaboration with Deborah O'Connor (Chair, Dept. of Nutritional Sciences, University of Toronto) has proven key to the consideration for allowing voluntary folic acid fortification of whole wheat flour in addition to white wheat flour. We showed that this could be a tenable options since whole wheat products replace white wheat products in the diet, so by adding folic acid to those products, we can address inadequate folate intakes in the population while avoiding increasing the prevalence of intakes greater than the Tolerable Upper Intake Level.*
50. Moussa, C., N. Ross, P. Jolette, **A.J. MacFarlane**. Altered folate metabolism modifies cell proliferation and progesterone secretion in human placental choriocarcinoma JEG-3 cells. *Br J Nutr* 114(6): 844-52. 2015.
51. Aarabi, M., M.C. San Gabriel, D. Chan, N.A. Behan, M. Caron, T. Pastinen, G. Bourque, **A.J. MacFarlane**, A. Zini, J. Trasler. High dose folic acid supplementation alters the human



sperm methylome and is influenced by the MTHFR C677T polymorphism. *Hum Mol Genet* 24(22): 6301-13. 2015.

52. Husseini, M., G.S. Wang, C. Patrick, J.A. Crookshank, **A.J. MacFarlane**, J.A. Noel, A. Strom, F.W. Scott. Heme oxygenase-1 induction prevents autoimmune diabetes in association with pancreatic recruitment of M2-like macrophages, mesenchymal cells, and fibrocytes. *Endocrinology* 156(11): 3937-49. 2015.
53. **MacFarlane, A.J.**, N.A. Behan, M.S. Field, A. Williams, P.J. Stover, C.L. Yauk. Dietary folic acid protects against genotoxicity in the red blood cells of mice. *Mutat Res* 779: 105–111. 2015.
54. Stover P.J., **A.J. MacFarlane**, M.S. Field. Bringing clarity to the role of MTHFR variants in neural tube defect prevention. *Am J Clin Nutr* 101: 1111-1112. 2015.
55. Zinck, J.W.R., M. de Groh, **A.J. MacFarlane**. Genetic modifiers of folate, vitamin B-12, and homocysteine status in a cross-sectional study of the Canadian population. *Am J Clin Nutr* 101: 1295-1304. 2015.  
\*\*\*We identified a number of associations between B vitamin biomarkers and common genetic polymorphisms in the Canadian population. Many of the polymorphisms had previously been associated with diseases related to nutrient intakes but not to biomarkers of status.
56. Wilson RD; Genetics Committee, R.D. Wilson, F. Audibert, J.A. Brock, J. Carroll, L. Cartier, A. Gagnon, J.A. Johnson, S. Langlois, L. Murphy-Kaulbeck, N. Okun, M. Pastuck; Special Contributors, P. Deb-Rinker, L. Dodds, J.A. Leon, H. Lowel, W. Luo, **A. MacFarlane**, R. McMillan, A. Moore, W. Mundle, D. O'Connor, J. Ray, M. Van den Hof Pre-conception Folic Acid and Multivitamin Supplementation for the Primary and Secondary Prevention of Neural Tube Defects and Other Folic Acid-Sensitive Congenital Anomalies. *J Obstet Gynaecol Can* 37(6):534–552. 2015.  
\*\*\*This iteration of the SOGC guideline was a pivotal change to the recommendations for folic acid intake in pregnancy. A previous version (2007) had identified 5 mg folic acid as an appropriate dose for essentially all pregnant Canadians. This version specifically defined who would benefit from higher doses of folic acid and who would not. I was part of the working group who over a period of months developed the new guidance.
57. Washburn, S.E., M.A. Caudill, O. Malysheva, **A.J. MacFarlane**, N.A. Behan, B. Harnett, L. MacMillan, T. Pongnopparat, J.T. Brosnan, M.E. Brosnan. Formate metabolism in the fetal and neonatal sheep. *Am J Physiol – Endocrinol Metab* 308(10):E921-7. 2015.
58. Morrow, G.P., L. MacMillan, S.G. Lamarre, S.K. Young, **A.J. MacFarlane**, M.E. Brosnan, and J.T. Brosnan. *In vivo* kinetics of formate metabolism in folate-deficient and folate-replete rats. *J Biol Chem* 290(4):2244-50. 2015.
59. Zinck, J.W.R., and **A.J. MacFarlane**. Approaches for the identification of genetic modifiers of nutrient dependent phenotypes: Examples from folate. *Front Nutr* 1(8):1-10. 2014.
60. Shi, Y., M. de Groh and **A.J. MacFarlane**. Sociodemographic and lifestyle factors associated with folate status among non-supplement-consuming Canadian women of child-bearing age. *Can J Public Health* 105(3):e166-e171. 2014.
61. **MacFarlane, A.J.**, Y. Shi and L.S. Greene-Finestone. High dose compared to low dose vitamin B12 supplement use is not associated with higher vitamin B12 status in children, adolescents and older adults. *J Nutr* 144(6):915-20. 2014.
62. **MacFarlane, A.J.**, M.F. McEntee, P.J. Stover. Azoxymethane-induced colon carcinogenesis in mice occurs independently of de novo thymidylate synthesis capacity. *J Nutr* 144(4):419-24. 2014.

63. Swayne, B.G., A. Kawata, N.A. Behan, A. Williams, M.G. Wade, **A.J. MacFarlane**, C.L. Yauk. Investigating the effects of dietary folic acid on sperm count and integrity. *Mutat Res* **737**(1-2): 1-7. 2012.
64. **MacFarlane, A.J.**, N.A. Behan, F. Matias, J. Green, D. Caldwell, S.P.J. Brooks. Dietary folate does not significantly affect the intestinal microbiome, inflammation, or tumorigenesis in AOM-DSS treated mice. *Br J Nutr* **5**: 1-9. 2012.
65. Koziol A.G., E. Loit, M.S. McNulty, **A.J. MacFarlane**, F.W. Scott, I. Altosaar. Globulin-3 storage proteins in wheat embryos are cleaved post-translationally, as shown by mass spectrometry. *BMC Res Notes* **5**:385. 2012
66. Swayne B.G., N.A. Behan, A. Williams, P.J. Stover, C.L. Yauk, **A.J. MacFarlane**. Supplemental dietary folic acid has no effect on chromosome damage in erythrocyte progenitor cells of mice. *J Nutr* **142**(5): 813-7. 2012.
67. **MacFarlane, A.J.**, D.A. Anderson, P. Flodby, C.A. Perry, R.H. Allen, S.P. Stabler, P.J. Stover. Nuclear localization of the *de novo* thymidylate biosynthesis pathway is required to prevent uracil accumulation in DNA. *J Biol Chem* **286**(51): 44015-22. 2011.
68. **MacFarlane, A.J.**, L. Greene-Finestone, Y. Shi. Vitamin B12 and homocysteine status in a folate-replete population: Results from the Canadian Health Measures Survey. *Am J Clin Nutr* **94**(4): 1079-87. 2011.
69. Sonier, B., A. Strom, G.-S. Wang, C. Patrick, J. A. Crookshank, M. Mojibian, **A.J. MacFarlane**, F.W. Scott. Antibodies from a patient with type 1 diabetes and celiac disease bind to macrophages that express the scavenger receptor CD163. *Can J Gastroenterol* **25**(6):327-29. 2011.
70. **MacFarlane, A.J.**, C.A. Perry, M.F. McEntee, D.M. Lin, P.J. Stover. *Mthfd1* is a modifier of chemically-induced intestinal carcinogenesis. *Carcinogenesis* **32**(3):427-33. 2011.
71. **MacFarlane, A.J.**, C.A. Perry, M.F. McEntee, D.M. Lin, P.J. Stover. *Shmt1* heterozygosity impairs folate-dependent thymidylate synthesis capacity and modifies *Apc<sup>min</sup>*-mediated intestinal cancer risk in mice. *Cancer Res* **71**(6):2098-107. 2011.
72. **MacFarlane, A.J.**, A. Strom, F.W.Scott. Epigenetics – Deciphering how environmental factors may modify autoimmune type 1 diabetes. *Mamm Genome* **20**(9-10):624-32. 2009.
73. **MacFarlane, A.J.**, C.A. Perry, H.H. Ginary, R.H. Allen, S.P. Stabler, P.J. Stover. *Mthfd1* is an essential gene in mice and alters biomarkers of impaired one-carbon metabolism. *J Biol Chem* **284**(3): 1533-39. 2009.
74. Loit, E., C. Melnyk, **A.J. MacFarlane**, F.W. Scott, I. Altosaar. Identification of three wheat globulin genes by screening a *T. aestivum* BAC genomic library with cDNA from a diabetes-associated globulin. *BMC Plant Biol* **9**: 93. 2009.
75. Stover, P.J., **A. J. MacFarlane**. Mouse models to elucidate mechanisms of folate-related cancer pathologies. *Nutr Rev* **66**(Suppl. 1): S54-S58. 2008.
76. **MacFarlane, A.J.**, X. Liu, C.A. Perry, P. Flodby, R.H. Allen, S.P. Stabler, P.J. Stover. Cytoplasmic serine hydroxymethyltransferase regulates homocysteine remethylation but is not essential in mice. *J Biol Chem* **283**(38): 25846-53. 2008.
77. **MacFarlane, A.J.**, P.J. Stover. Convergence of genetic, nutritional and inflammatory factors in gastrointestinal cancers. *Nutr Rev* **65** (12 Pt 2): S157-66. 2007.
78. Mojibian, M., H. Chakir, **A.J. MacFarlane**, D. Lefebvre, J.R. Webb, C. Touchie, J. Karsh, J. Crookshank, F.W. Scott. Immune reactivity to a Glb1 homologue in a highly wheat sensitive patient with type 1 diabetes and celiac disease. *Diabetes Care* **29**: 1108-10. 2006.

79. **MacFarlane A.J.**, K.M. Burghardt, J. Kelly, T. Simell, O. Simell, I. Altosaar, F.W. Scott. A type 1 diabetes-related protein from wheat (*Triticum aestivum*); cDNA clone of a wheat storage globulin, Glb1, linked to islet damage. *J Biol Chem* **278** (1): 54-63. 2003.
80. **MacFarlane, A.J.**, D.L. Sutherland, T.R. Goff, K.M. Gilmour. *In vivo* photostabilization of tetracycline hydrochloride by reduced glutathione for use as an ecological marker in *Salmo salar*. *Aquaculture* **213** (1-4): 253-63. 2002.

#### **Journal articles submitted or in preparation**

81. Moussa, C., D. Leblanc, D. Chan, L. Ly, N.A. Behan, C.L. Yauk, J. Trasler, F. Marchetti, A.J. MacFarlane. Preconceptional paternal folate deficiency induces congenital anomalies and developmental delay in offspring in mice. *Submitted.*
82. Chaudhry, S.; W. Sun, M. Taljaard; **A.J. MacFarlane**, L. Gaudet, M. Walker, S.W. Wen. The association of maternal homocysteine with placenta-mediated pregnancy complications: A systematic review and meta-analysis. *Submitted.*
83. Patti, M.A., K.T. Kelsey, **A.J. MacFarlane**, G.D. Papandonatos, W.D. Fraser, B.P. Lanphear, G. Muckle, J.M. Braun. Profiles and Predictors of Child Neurodevelopment and Anthropometry: The Maternal Infant Research on Environmental Chemicals Study. *Submitted.*
84. Kelly, S.E., K. Benkhedda, S.P.J. Brooks, **A.J. MacFarlane**, L.S. Greene-Finestone, B. Skidmore, T.J. Clifford, G.A. Wells. Risk of bias in cross-sectional studies: protocol for a scoping review of concepts and tools. *Submitted.*
85. Karahan, G., J. Martel, S. Rahimi, M. Farag, **A.J. MacFarlane**, D. Chan, and J. Trasler. Higher Incidence of Embryonic Defects in Murine Offspring Conceived with Assisted Reproduction from Fathers with Sperm Epimutations. *Submitted.*
86. Dai, S., J. Wellens, N. Yang, D. Li, J. Wang, L. Wang, J. Sun, S. Yuan, Y. He, P. Song, R. Munger, M. Potvin-Kent, **A.J. MacFarlane**, P. Mullie, S. Duthie, J. Little, E. Theodoratou, X. Li. Ultra-processed foods and human health: an umbrella review and updated meta-analyses of observational evidence. *Submitted.*
87. Hua, J.M.Y., T.E. Arbuckle, P.A. Janssen, B.P. Lanphear, J.M. Braun, J.D. Alampi, **A.J. MacFarlane**, A. Chen, L.C. McCandless. Gestational exposure to organochlorine compounds and metals with infant birth weight: Effect modification by maternal hardships. *In preparation.*
88. Alampi, J.D., B.P. Lanphear, **A.J. MacFarlane**, Y. Oulhote, J.M. Braun, G. Muckle, T.E. Arbuckle, J. Ashley-Martin, J.M.Y. Hua, A. Cheng, L.C. McCandless. Combined exposure to folate and lead during pregnancy and autistic behaviors in a Canadian pregnancy cohort. *In preparation.*
89. Khanna, S., S. Aufreiter, **A.J. MacFarlane**, Y.A. Shakur, D.L. O'Connor. Folate and Synthetic Folic Acid Content in Canadian Fortified Foods Two Decades After Mandatory Fortification. *In preparation.*

#### **Book chapters**

90. National Academies of Sciences, Engineering, and Medicine. 2018. Chapter 3: Harmonization Frameworks. In, Global harmonization of methodological approaches to nutrient intake recommendations: Proceedings of a workshop. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/25023>  
\*\*Section entitled "Endpoints: Differences when considering deficiency versus chronic disease" is a summary of my presentation at the workshop

91. National Academies of Sciences, Engineering, and Medicine. 2018. Chapter 5: Building the Evidence Base: Research Approaches for Nutrients in Disease States. In, Examining special nutritional requirements in disease states: Proceedings of a workshop. Washington, DC: The National Academies Press. doi: <https://doi.org/10.17226/25164>.  
*\*\*Section entitled "Type and Strength of Evidence Needs for Determining Special Nutrient Requirements" is a summary of my presentation at the workshop*
92. **MacFarlane, A.J.** and Stover, P.J. Gastrointestinal Disorders: Overview. In, *International Encyclopedia of Public Health* Second Edition. S. Quah, ed. Elsevier, Amsterdam, The Netherlands. Vol. 3 pp. 9-19. 2016.
93. **MacFarlane, A.J.**, and P.J. Stover. Gastrointestinal Disorders: Overview. In, *Reference Module in Biomedical Sciences*. Elsevier, Waltham, MA. 2014.
94. **MacFarlane, A.J.** Epigenetic epidemiology of Type 1 diabetes. In, *Epigenetic Epidemiology*. K.B. Michels, ed. Springer Publishing, New York, NY. 2012.
95. **MacFarlane, A.J.**, P.J. Stover. Gastrointestinal disorders. In, *International Encyclopedia of Public Health First edition*. H.K. Heggenhougen, ed. Elsevier, Amsterdam, The Netherlands. 2008.
96. **MacFarlane, A.J.**, F.W. Scott. Environmental agents and type 1 diabetes. In, *Textbook of Diabetes, third edition*. Pickup, J.C., and G. Williams, eds. Blackwell Science Ltd Oxford UK. 2003.

### **Government reports and monographs**

97. Health Canada. Multi-Vitamin/Mineral Supplements Monograph. Updated Sept. 25, 2018. [http://webprod.hc-sc.gc.ca/nhp/nd-bdpsn/atReq.do?atid=multi\\_vitmin\\_suppl#a57](http://webprod.hc-sc.gc.ca/nhp/nd-bdpsn/atReq.do?atid=multi_vitmin_suppl#a57)  
*\*\*I drafted the optional label statement that can be applied to products providing 400 mcg or more of folate, per day, such as those marketed as a pregnancy or prenatal supplement (section 5.7): "400 mcg of folate per day is adequate for most women (to reduce the risk of neural tube defects). Consult a health care practitioner/health care provider/health care professional/doctor/physician to determine if you would benefit from additional folate before taking this product."*
98. Bureau of Nutritional Sciences, Health Canada. "Technical consultation on core nutrients: core nutrients to be displayed in the nutrition facts table." 2014.  
*\*\*Core nutrients working group member. I wrote the sections on B vitamins including the rationale for inclusion/exclusion from the nutrition facts table.*
99. "Sodium - Assessment of Evidence for DRI Review Consideration" 2014.  
*\*\*I was the Sodium In-Depth Assessment Working Group Chair, penholder for the sodium report produced for the Canadian and US DRI Steering Committees' assessment and prioritization of the sodium nomination for DRI review.*
100. Van Den Hof, M., **A.J. MacFarlane**, W. Luo. Primary prevention: Modifiable risk factors. In, *Congenital Anomalies Surveillance Report, 2013*. Public Health Agency of Canada, Ottawa, ON. 2013.

### **Web content**

101. Health Canada <https://www.canada.ca/en/health-canada/services/food-nutrition/healthy-eating/dietary-reference-intakes.html> and US <https://health.gov/dietaryguidelines/dri/> Dietary Reference Intakes websites. 2014 and 2015. (I co-authored updates for both government websites).
102. Government of Canada Healthy Canadians Website. <http://healthycanadians.gc.ca/healthy-living-vie-saine/pregnancy-grossesse/general-information-renseignements-generaux/folic-acid-acide-folique-eng.php>. (I updated all

information related to folic acid supplementation in pregnancy to reflect changes to the 2015 Society of Obstetricians and Gynaecologists of Canada Practice Guidelines for folic acid recommendations). 2014.

103. Statistics Canada Canadian Health Measures Survey Biobank website. (I co-wrote the web update for the project "Genetic modifiers of folate, vitamin B-12, and homocysteine status in a cross-sectional study of the Canadian population" <http://www.statcan.gc.ca/eng/help/microdata/biobank#a7>). 2015.

### **Public database contributions**

104. **MacFarlane A**, **Moussa C**, **LeBlanc D**, **Behan NA**, Chan D, Ly L, Martel J, Gagné R, Yauk CL, Trasler J, Marchetti F, Rowan-Carroll A. Gene Expression Omnibus (GEO) Series GSE129686 (held private to June, 2022). Effect of paternal folic acid intake on hepatic RNA expression in his male offspring. 2018.
105. **Moussa C**, **LeBlanc D**, Chan D, **Behan N**, Ly L, Martel J, Rahimi S, Gagne R, Yauk C, Trasler J, Marchetti F, **MacFarlane A**. Gene Expression Omnibus (GEO) Series GSE139893 (held private to June, 2022). Effect of paternal folic acid intake on sperm DNA methylation. 2018.
106. Stover PJ, **MacFarlane AJ**, Lin DM, Perry C, McEntee MF. Gene Expression Omnibus accession GSE15419. Mthfd1 is a modifier of intestinal carcinogenesis (microarray data). 2010.
107. Stover PJ, **MacFarlane AJ**, Lin DM, Perry C, McEntee MF. Gene Expression Omnibus accession GSE14645. Gene expression data of cSHMT mutant, heterozygous, and wild-type mouse colons (microarray data). 2009.
108. Loit,E., Melnyk,C.W., **MacFarlane,A.J.**, Scott,F.W. and Altosaar,I. GenBank Accession FJ439134.1, FJ439135.1, FJ439136.1 Glo-3C, Glo-3A and Glo-3B gene sequences. 2008.

### **Other**

109. Statistics Canada. Canadian Health Measures Survey Cycle 1: Data Dictionary for the Full Sample - Biobank - Rounded September 2015. (I co-wrote the data dictionary for the nutritional genomics project funded by PHAC GRDI). 2015.
110. Statistics Canada. Canadian Health Measures Survey Data User Guide: Cycle 1 Biobank Project - Folate and Vitamin B12. (I co-wrote the lay user summary from the PHAC GRDI funded biobank project "The modifying effect of genetic polymorphisms involved in folate and Vitamin B12 metabolism on the relationship between folate/B12 intake and vitamin status". 2015.
111. Coates, P.M, L.H. Allen, M. Belury, K. Schalinske, S.L. Booth, A. Stull, B. Lyle, R. Bailey, N. Krebs, M.I. McBurney, N. Moustaid-Moussa, K. West, Jr., **A. MacFarlane**. A New Chapter for the American Society for Nutrition's Journal. *Am J Clin Nutr, J Nutr., Cur Devel Nutr, Adv Nutr.* 2022.

**SELECTED SCIENTIFIC PRESENTATIONS (LAST 10 YEARS ONLY, >120 LIFETIME)**

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**Invited presentations****2022 Canadian Nutrition Society Workshop Series (3 sessions over 3 weeks)**

Invited co-presenter: Assessing risk of bias in nutrition studies: NUQUEST

**2022 WHO/Cochrane/Cornell University Summer Institute for Systematic Reviews in Nutrition for Global Policy Making**

Invited presenter with NUQUEST Team

Didactic presentation: NUQUEST: A risk of bias tool for nutrition studies

Workshop I: NUQUEST Application: Randomized Controlled Trial

Workshop II: NUQUEST Application: Cohort Study

**2022 Canadian Nutrition Society Webinar**

Invited co-presenter with Shannon Kelly: NUQUEST: A risk of bias tool for nutrition studies

**2022 NIEHS Virtual Workshop: Can nutrition modify the impact of environmental exposures on autism spectrum disorder?**

Invited speaker: Considerations when assessing nutritional modification of environmental exposure - autism associations: Examples from B vitamins and one-carbon metabolism

**2022 NIH Nutrition Research Coordinating Committee Meeting**

Invited speaker: Updates on the Dietary Reference Intakes

**2021 Virtual Federal Food Safety and Nutrition Research Forum 2021**

Invited speaker: Impact of High Dose Folic Acid Supplement Use on the Folate Status Among Canadian Women in the Context of Mandatory Fortification

**2021 Health Products and Food Branch Science Road Show (virtual)**

Invited speaker: Folic acid fortification: A case study in translating research to policy

**2021 13th International Conference on One Carbon Metabolism, B vitamins and Homocysteine, Poznan, Poland (virtual attendance)**

Invited speaker: Folate intake and genome stability – a complex relationship

**2021 2<sup>nd</sup> Technical Session of the International Liaison Group on Nutrient Reference Methodologies**

Invited speaker: NUQUEST – NUtrition QUality Evaluation Strengthening Tool – for the quality assessment of nutrition studies

**2021 American Society for Nutrition Webinar: Intersections Between Nutrition Research and Nutrition Science Policy**

Invited speaker: Regulatory Policy: Folic acid fortification policy

**2021 1<sup>st</sup> Technical Session of the International Liaison Group on Nutrient Reference Methodologies**

Invited speaker: Rationale and development of the Chronic Disease Risk Reduction Values

**2021 NIH Nutrition Research Coordinating Committee Meeting**

Invited speaker: Dietary Reference Intakes: Process, Priorities and Next Steps

**2020 BC Children's Hospital Research Institute, Vancouver, BC**

Invited speaker: Preconceptional paternal folic acid intake influences fertility outcomes and offspring phenotypes

**2020 University of British Columbia, Vancouver, BC**

Invited speaker: Optimizing folic acid intake among Canadian women of childbearing age

**2020 BC Children's Hospital Research Institute, Vancouver, BC**

- Invited speaker: Publishing impactful research in leading nutrition journals
- 2019 **Canadian Nutrition Society, How to Develop Dietary Reference Intakes Based on Chronic Disease Endpoints: The Omega-3's EPA & DHA, A Case Study Workshop**  
Invited speaker: The Dietary Reference Intakes Process and Guiding Principles for using Chronic Disease Endpoints
- 2019 **Instituto Gulbenkian de Ciencia Speaker Series, Oeiras, Portugal**  
Invited speaker: Preconceptional paternal folic acid intake influences embryo development and other offspring phenotypes
- 2019 **Ontario Public Health Association Reproductive Health Workgroup**  
Invited speaker: Optimizing folic acid intake among women of childbearing age in an era of fortification
- 2019 **Ulster University Nutrition Innovation Centre for Food and Health, Coleraine, Northern Ireland**  
Invited speaker: Lessons learned from Canada: Optimizing folic acid intake among women of childbearing age in an era of fortification
- 2019 **Ulster University Nutrition Innovation Centre for Food and Health, Coleraine, Northern Ireland**  
Invited speaker: Publishing impactful research in leading nutrition journals
- 2019 **U.S. National Institutes of Health Workshop on Metabolic Interaction between excess Folates/Folic acid and Vitamin B12 deficiency**  
Invited speaker: Model systems and dose effects for high dose folic acid research
- 2019 **12th International Conference on One Carbon Metabolism, B vitamins and Homocysteine, Montbrío, Spain**  
Plenary speaker: Role of perturbed B vitamin status in the development of pathogenic mechanisms: Evidence from Animal Studies
- 2019 **3rd Scientific Meeting of the Canadian DOHaD Society, Mont Tremblant, QC**  
Invited speaker: Folic acid supplementation reduces female germ cell aneuploidy in Bub1 transgenic mice, a model of age-dependent oocyte aneuploidy
- 2019 **Canadian National Perinatal Research Meeting 2019, Mont Tremblant, QC**  
Invited panelist: Career Advice Across Sectors for Young Scientists and Clinicians
- 2018 **Nutrition and Food Science Seminar, Texas A&M University, College Station, TX**  
Invited speaker: Effect of folic acid intake on the somatic and germline genome and epigenome and their impact on health outcomes
- 2018 **Healthy Texas Meeting, Texas A&M University, College Station, TX**  
Invited speaker: Health Canada's proposed Front of Package labelling
- 2018 **First International Conference on Precision Nutrition and Metabolism in Public Health and Medicine, Chania, Greece**  
Invited speaker: From population to personalized nutrition: A paradigm shift for developing recommendations for optimal health
- 2018 **The National Academies of Sciences, Engineering and Medicine, Examining Special Nutritional Requirements in Disease States: A Workshop, Washington, DC**  
Invited speaker: Type and strength of evidence for determining special nutrient requirements
- 2017 **Centre de recherche en reproduction, développement et santé intergénérationnelle. Université Laval, Quebec City, Quebec**  
Invited speaker: Blaming Dad too: Paternal folic acid deficiency impairs offspring development

- 2017 **Nordic Nutrition Recommendations Workshop sponsored by the Nordic Council. Oslo, Norway**  
Keynote speaker: Dietary Reference Intake Development: US/Canada Perspective
- 2017 **Workshop “Periconceptional intake of folic acid among low-risk women: aligning prenatal supplement content with current expert guidelines”. Ottawa, ON**  
Keynote speaker: Canadian Recommendations for Periconceptional Folic Acid Use for the Prevention of Neural Tube Defects
- 2017 **The National Academies of Sciences, Engineering and Medicine/World Health Organization/Food and Agriculture Organization of the United Nations, Global Harmonization of Methodological Approaches to Nutrient Intake Recommendations Workshop, Rome, IT**  
Invited speaker: Endpoints – Differences when considering deficiency vs. chronic disease  
Facilitator: Session on Applications, facilitating quality, and cost effectiveness  
Moderator: Session on Advantages, barriers, and challenges to global harmonization of methodologies for nutrient intake recommendations
- 2017 **Academy of Nutrition and Dietetics Research (US), Dietetics Practice Group Webinar Series**  
Invited speaker: Basing Dietary Reference Intake (DRI) values on chronic disease endpoints
- 2017 **Joint Seminar Series of the University of Ottawa NSERC CREATE-Research in Environmental and Analytical Chemistry and Toxicology and The Collaborative Program in Chemical and Environmental Toxicology, Ottawa, ON**  
Invited speaker: Impact of parental nutrition on offspring health and development
- 2016 **Society for Risk Analysis 2016 Annual Meeting, San Diego, CA**  
Invited speaker and Panelist: Current realities and future options for using chronic disease endpoints to set Dietary Reference Intake (DRI) values
- 2016 **Instituto Gulbenkian de Ciência, Oeiras, Portugal**  
Invited speaker: Father's In Utero and Postweaning Dietary Folic Acid Intake Affects the Health and Development of his Offspring
- 2016 **Child Health and Human Development Program, Research Institute of the McGill University Health Centre, Montreal, QC**  
Invited speaker: Father's In Utero and Postweaning Dietary Folic Acid Intake Affects the Health and Development of his Offspring
- 2016 **FASEB Scientific Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism, Steamboat Springs, CO**  
Invited speaker: Genetic Determinants of B Vitamin Requirements
- 2016 **Experimental Biology 2016, San Diego, CA**  
Invited speaker and panelist for the American Society for Nutrition Presidential Symposium: Systems Approaches to Nutrition
- 2016 **International Life Sciences Institute Annual Meeting 2016. St. Petersburg, FL**  
Invited speaker and panelist: Adverse Effects: Consideration of Chronic Disease Endpoints and Beyond Session title: Conundrum: How Do We Define the Continuum – from Perturbation to Adverse Effects?
- 2015 **Dr. Georges-L.-Dumont University Hospital Center, Moncton, NB**  
Invited speaker: Determinants of B vitamin status in the Canadian population in the context of fortification and supplement recommendations



2015 **XXII North American Testis Workshop, Salt Lake City, UT**

Invited speaker: Father's in utero and postnatal folate exposures affect offspring health.

**A.J. MacFarlane**, J.W.R. Zinck, N.A. Behan, M. Caudill, C.L. Yauk.

2015 **Setting Dietary Reference Intakes Based on Chronic Disease Risk Reduction, Cornell University, Ithaca, NY**

Invited speaker, Division of Nutritional Sciences, Cornell University

2014 **University of Ottawa Comparative Physiology Group, Ottawa, ON**

Invited speaker: Dad's diet matters: Transgenerational effects of paternal folate status

**Conference presentations**

2023 **2023 Health Canada Science Forum**

*Poster presentation:* Descriptive analysis of select nutrients and heavy metals in human milk collected from the Maternal-Infant Research on Environmental Chemicals (MIREC) pregnancy cohort. M.J. Joung, K. Hopperton, S. Chakrabarti, M. Stanton, S. Parnel, J. Ashley-Martin, J. Bertinato, M. Borghese, S. Brooks, K. Cockell, R. Dabeka, I. Demonty, A. MacFarlane, T. Rawn, H. Weiler, C. Xiao, M. Fisher.

*Poster presentation:* Development and validation of NUQUEST-Nutrition Quality Evaluation Strengthening Tools for the evaluation of risk of bias in nutrition studies. K. Benkhedda, S.P.J. Brooks, L.S. Greene-Finest, S.E. Kelly, **A.J. MacFarlane**, G.A. Wells, E.A. Yetley.

2022 **63e réunion du Club de Recherches Cliniques du Québec, Québec City**

Selected oral presentation (trainee) : Statut élevé en folate pendant la grossesse: association avec la prise de suppléments alimentaires. St-Laurent A, Plante A-S, Lemieux S, Robitaille J, **MacFarlane A**, Morisset A-S.

2022 **2022 Health Canada Science Forum (virtual)**

Poster presentation: Toxic Metals and Nutrients (vitamin D, folate and B12) - exploring the complex interplay with bidirectional analysis. Fisher, M., O. Brion, H. Weiler, **A.J. MacFarlane**, J. Ashley-Martin, T. Arbuckle, M. Borghese, R. Shutt, P. Kumarathanan.

2021 **2021 Health Canada Science Forum (virtual)**

Selected oral presentation: Impact of high-dose folic acid supplementation in pregnancy on biomarkers of folate status and one-carbon metabolism: An ancillary study of the Folic Acid Clinical Trial (FACT). **MacFarlane AJ**, MSQ Murphy, KA Muldoon, H Sheyholislami, N Behan, Y Lamers, N Rybak, R Rennicks White, ALJ Harvey, LM Gaudet, GN Smith, MC Walker, SW Wen

2020 **FASEB Scientific Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism, Virtual Conference**

Poster presentation: Impact of high-dose folic acid supplementation in pregnancy on biomarkers of folate status and one-carbon metabolism: An ancillary study of the Folic Acid Clinical Trial (FACT). **MacFarlane AJ**, MSQ Murphy, KA Muldoon, H Sheyholislami, N Behan, Y Lamers, N Rybak, R Rennicks White, ALJ Harvey, LM Gaudet, GN Smith, MC Walker, SW Wen

2018 **FASEB Scientific Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism, Western Shore, NS**

Selected oral presentation: Folic acid supplementation reduces female germ cell aneuploidy but increases premature sister chromatid separation in Bub1 transgenic mice. **MacFarlane AJ**, M Mikwar, F Marchetti

Poster presentation: Preconceptional Paternal Folate Deficiency Induces Congenital Anomalies and Developmental Delay in Offspring in Mice. **MacFarlane AJ**, C Moussa, D LeBlanc, D Chan, L Ly, NA Behan, CL Yauk, J Trasler, F Marchetti

Poster presentation: Periconceptional intake of folic acid among low-risk women in Canada: summary of a workshop aiming to align prenatal folic acid supplement composition with current expert guidelines. Lamers Y, **AJ MacFarlane**, D.L. O'Connor and B. Fontaine-Bisson

2017 **11th International Congress of Andrology, Copenhagen, DK**

Poster: Preconceptional Paternal Folate Deficiency in Mice is Associated with Congenital Anomalies and Developmental Delay in Offspring. **AJ MacFarlane**, C Moussa, D Leblanc, D Chan, L Ly, NA Behan, CL Yauk, J Trasler, and F Marchetti

2016 **2016 Canadian Nutrition Society Annual Conference, Ottawa, ON**

Poster presentation: Effect of folic acid deficiency and supplementation over multiple generations on microsatellite Mm2.2.1 mutations in mice. **A.J. MacFarlane**, F.M. Matias\*, N.A. Behan, C.L. Yauk.

2015 **10th Conference on One Carbon Metabolism, Vitamins B and Homocysteine, Nancy, France**

Selected oral presentation: Genetic modifiers of folate, vitamin B12 and homocysteine status in a nationally representative sample of the Canadian population. **A.J. MacFarlane**, J.W.R. Zinck, M. de Groh.

2015 **10th Conference on One Carbon Metabolism, Vitamins B and Homocysteine, Nancy, France**

Selected oral presentation: Father's in utero and postweaning folic acid intake affects the health of his offspring. **A.J. MacFarlane**, C. Moussa, J.W.R. Zinck, N.A. Behan, C.L. Yauk, M. Caudill.

2014 **FASEB Scientific Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism, Steamboat Springs, CO**

Poster presentation: **MacFarlane, A.J.**, J.W.R. Zinck, N.A. Behan, C.L. Yauk, M. Caudill. Male dietary folic acid intake alters one-carbon metabolism in their unexposed descendants.

2013 **9th International Conference on Homocysteine Metabolism, Dublin, Ireland**

Selected oral presentation: High Dose Vitamin B12 Supplementation In Canadian Children And Adolescents Is Not Associated With Improved Status Compared To Low Dose Supplementation. **MacFarlane, A.J.**, L. Greene-Finestone, Y. Shi.

Poster presentation: Association of vitamin B12 supplement use and dose with vitamin B12 status in the Canadian population. **MacFarlane, A.J.**, L. Greene-Finestone, Y. Shi.

2013 **Food Fortification Meeting with the Armenian Delegation, Health Canada**

Oral presentation: Case study: Folic acid addition to flour to reduce the risk of neural tube defects

2013 **Experimental Biology 2013 Annual Meeting, Boston, MA**

Poster presentation: Fortifying whole wheat flour with folic acid does not change the prevalence of folate inadequacy nor the percentage of Canadians with intakes above the Tolerable Upper Intake Level (UL). Chan, Y.-M., **A. J. MacFarlane**, D.L. O'Connor.

2012 **Joint Annual Scientific Meeting of the International Clearinghouse for Birth Defects Prevention & Research and the Canadian Congenital Anomalies Surveillance Network, Ottawa, ON**

Selected oral presentation: Additional benefits of folic acid fortification: impact on measures of male fertility. **MacFarlane, A.J.**, B. Swayne, A. Kawata, N. Behan, M. Wade, C.L. Yauk.

### **Other presentations**

2023

2017 **The National Academies of Sciences, Engineering and Medicine, Committee for the Review of the Dietary Reference Intakes for Sodium and Potassium, Washington, DC**

Sponsor co-presenter (with David Klurfeld, US Dept. of Agriculture): Considerations for the review of sodium and potassium DRIs

2016 **The National Academies of Sciences, Engineering and Medicine, Committee on Development of Guiding Principles for the Inclusion of Chronic Disease Endpoints in Future Dietary Reference Intakes, Washington, DC**

Sponsoring agency representative and speaker: Consideration of Chronic Disease Endpoints –The Options Report

2015 **Options for Consideration of Chronic Disease Endpoints for Dietary Reference Intakes (DRIs) Workshop, Bethesda, MD**

Co-director and introductory speaker: Workshop focus and charge.

### **PROFESSIONAL SERVICE**

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#### **Boards and committees**

2023-present, *Chair*, Committee on Advocacy and Science Policy, American Society for Nutrition

2023-present, *Member*, Planning committee of the National Academies of Sciences, Engineering, and Medicine for the Workshop Series: Use of Meta-Analyses in Nutrition Research and Policy

2023-present, *Member*, Scientific Advisory Group for the Bill & Melinda Gates Foundation-funded Micronutrient International project “Development and Market Introduction of Iodine-Folic Acid Fortified Salt (DFS-IoFA) in Ethiopia”

2022-present, *Guest member*, WHO Obesity Technical Working Group

2021-present, *Director-at-Large*, *Food and Nutrition Policy*, American Society for Nutrition Board of Directors

- *I have contributed to a number of ASN initiatives including preparing for the next phase of ASN 2028, planning the new year-round strategy for Nutrition 2022, establishing the ASN Foundation, the Nomination Committee’s membership, ASN’s new publication strategy, and ASN position statements, among others.*

2021, *Member*, European Food Safety Authority Expert Panel for the review of the upper tolerable intake levels of folic acid/folate

- *Panel members were tasked with identifying key exposure and outcome criteria to be included in the review of the UL for folate/folic acid.*

2020-2022, *Member*, International Liaison Group on Nutrient Reference Values Methodologies

- *The Group facilitates regular exchanges of information and collaboration regarding activities related to the development of nutrient reference values which are on-going at national/regional levels. Participants included Health Canada, US FDA, European Food Safety Authority, Food Standards Australia-New Zealand, among others.*

2019-present, *Member*. Scientific Advisory Group for the Nordic Nutrition Recommendations 2022/2023

- *The Group consists of internationally recognized scientists with experience in developing dietary reference values and food-based dietary guidelines for national authorities or health organizations. I specifically advised on the principles and methodologies for updating nutrient reference values, including reviewing the framework and methodology used for performing systematic literature reviews as part of the NNR2022 project. Reviewed the draft recommendations.*

2018-2019, *Co-Chair*. US-Canada Special Nutrient Requirements in Disease States Federal Working Group

- *The Group developed a case study based on chronic kidney disease to identify issues that aligned or differed from the Dietary Reference Intake values for the generally healthy population. In various presentations and reports, I proposed ways in which the DRI framework could be adapted to estimate nutrient requirements in disease states.*

2018-present, *Member*. Canadian Nutrition Society Ethics Committee

- *This committee is tasked with assessing potential conflicts of interest and determining best approaches to declaring and mitigating conflicts related to the society, its executive and general members.*

2014-2015, *Member*, Steering Committee for Evaluating the Safe Use of High Intakes of Folic Acid sponsored by Office of Health Assessment and Translation, US National Toxicology Program and NIH Office of Dietary Supplements

- *The committee identified and prioritized topics that would be addressed by systematic reviews and the workshop.*

2013-2022, *Chair and Canadian lead*, Joint Canada-US Dietary Reference Intakes Working Group

- *The US and Canadian governments have jointly undertaken the development of harmonized nutrient reference values, the Dietary Reference Intakes (DRI), since the mid-1990s. A small joint working group with representative from both governments develops, initiates, and implements plans and activities related to the DRIs. The joint working group reports to the Canadian and US DRI Steering Committees. I chair the group, including setting the agenda and organizing bi-weekly meetings, ensuring tasks are completed and contracts actioned. I am the Canadian government liaison with the National Academies of Sciences, Engineering and Medicine for all DRI-related work.*

2013-2022, *Member*, Canadian Interdepartmental/Interagency Steering Committee on the Dietary Reference Intakes

- *The Steering Committee oversees all activities related to the Dietary Reference Intakes on behalf of the Canadian Government.*

2013-2014, *Chair* of the Sodium In Depth Assessment Working Group for the DRI Nutrient Nomination Process.

- *The work included identifying and recruiting appropriate Canadian and US government scientists to perform a sodium review, organizing and chairing all meetings, leading an informal systematic review of the sodium literature, leading the writing of the report for the systematic review, and presentation of the results and interpretation of the review to the Canadian and US DRI Steering Committees. The report, entitled "Sodium - Assessment of Evidence for DRI Review Consideration" was used by the Steering Committees to prioritize sodium for a DRI review. The sodium and potassium DRI report was published in 2019.*

2013-2015, *Member*, Regulatory Revisions to the Canadian Nutrient Facts Table (NFT) – Core Nutrients Working Group, Health Canada

- *The NFT underwent a review and overhaul. My role was to draft issues sheets for multiple B vitamins, evaluate and propose core nutrients for the NFT, review public consultation for the proposed NFT core nutrients. Based on my evaluation and recommendation, neither vitamin B12 nor folate were defined as core nutrients.*

2011-2015, *Member*, Interagency Folic Acid Working Group, Public Health Agency of Canada and Health Canada

- *This group represented Federal contributors to the 2015 Society for Obstetricians and Gynaecologists of Canada recommendations for folic acid in the pre-conceptional period. It was in this role that I was a proponent to significantly refine the definition for who is an at-risk individual for neural tube defects who should consume high dose folic acid. We also provided advice to the Canadian Pediatric Society regarding inclusion of information related to folic acid supplementation in their pamphlets.*

2011-2014, *Member*, Vitamins and Minerals Max Levels Task Team.

- *This group was tasked with devising evidence-based criteria for maximum addition levels for vitamins and minerals to natural health products in food format, caffeinated beverages and supplemented foods, including the drafting of multiple guidance documents for industry. My specific role was to evaluate the risk of addition of B vitamins to these products and to advise on permitting their addition and to what level to these products.*

2010-2012, *Special contributor*. Review of the Society of Obstetricians and Gynaecologists of Canada recommendation for Pre-conception Folic Acid and Multivitamin Supplementation for the Primary and Secondary Prevention of Neural Tube Defects and Other Folic Acid-Sensitive Congenital Anomalies, guideline published in 2015

- *This iteration of the SOGC guideline was a pivotal change to the recommendations for folic acid intake in pregnancy. A previous version (2007) had identified 5 mg folic acid as an appropriate dose for essentially all pregnant Canadians. This version specifically defined who would benefit from higher doses of folic acid and who would not. I was part of the working group who over a period of months developed the new guidance.*

2010-2022, *Member*, Health Canada Genomics Working Group

- *This group evaluates the implementation of genomics tools in regulatory research and policy.*

### **Editorial boards**

2018-present, *Associate Editor*. The American Journal of Clinical Nutrition. (assigned ~75 manuscripts/year)

2010-2014, *Editorial board*. Frontiers in Nutrigenomics

### **Conference and workshop organizing**

2021, *Member*. Scientific Advisory Committee and Session Chair, 13th International Conference One-Carbon Metabolism, B Vitamins and Homocysteine

2020-2022, *Member*. Organizing committee for the 2022 FASEB Scientific Research Conference: Folic Acid, Vitamin B12 & One Carbon Metabolism

2019-2020, *Member*. Local organizing committee for the 53<sup>rd</sup> Annual Meeting of the Society for the Study of Reproduction Annual Meeting (cancelled due to Covid-19)

2016-2017, *Workshop co-organizer and grant co-investigator*, “Periconceptional intake of folic acid among low-risk women: aligning prenatal supplement content with current expert guidelines”. Ottawa, ON (Nov 2017)

- *The goal of the workshop was to identify challenges and solutions to aligning supplemental FA intakes with current evidence-based recommendations. Stakeholders from academia, industry, government, and health professional groups participated. The workshop identified and prioritized 5 key challenges for which solutions and implementation strategies were proposed. The 5 themes encompassed clarity and harmonization of evidence-based guidelines, reformulation or relabeling of FA-containing supplements, access to FA for all women, knowledge dissemination strategies and education of the public and health care professionals, and attitude change to overcome the perception of "more is better." Direct outcomes of this workshop included industry stakeholders choosing to reformulate their prenatal supplements to lower folic acid doses and a voluntary statement permitted by Health Canada to be added to folic acid containing prenatal supplements promoting the consumption of lower folic acid intakes by individuals at lower risk for a neural tube defect-affected pregnancy.*

2014-2017, *Project co-director*, “Options for Addressing Consideration of Chronic Disease Endpoints for Dietary Reference Intakes (DRIs)”.

- *This was an endeavor of the Joint Canada-US DRI Working Group consisting of members of the Canadian and US DRI Steering Committees. The work was supported financially by multiple Canadian (Health Canada and Public Health Agency of Canada) and US agencies (NIH, USDA, FDA). I was the Canadian lead on the workshop development and organization, working closely with my US co-lead Dr. Elizabeth Yetley (NIH). I co-organized, attended and co-led all pre-workshop meetings with the panel of external experts. I managed the Health Canada contract with the USDA ATIP Foundation for pre-workshop administration. The pre-workshop preparation was initiated in March of 2014 and continued weekly until the workshop was held in early March 2015. Post-workshop meetings were held at least monthly as the project report was developed. I was the corresponding author of the “Options Report”, which was published in the American Journal of Clinical Nutrition (January 2017) as a special supplement. The Options Report was the foundation for the Guiding Principles for Developing Dietary Reference Intakes Based on Chronic Disease, a report from a Health Canada-sponsored (coordinated with our US Federal partners) ad hoc committee of the National Academies of Sciences, Engineering and Medicine (NASEM). The Guiding Principles were first applied in the review of the Sodium and Potassium DRIs, a report published in 2019 from a Health Canada-sponsored (coordinated with our US Federal partners) ad hoc committee of the NASEM.*

2009-2010, *Health Canada Lead*. Federal Food Safety and Nutrition Research Meeting Organizing Committee, Health Canada, Ottawa, Ontario

### **External grant and fellowship reviews**

- 2019 Canadian Institutes of Health Research (CIHR) Knowledge Translation Research (KTR) committee
- 2018 US National Institutes of Health SCORE grant program
- 2017, 2018, 2020, 2021. Canadian Institutes of Health Research Nutrition, Food and Health Committee - Project Grant Competition
- 2016 Biotechnology and Biological Sciences Research Council (BBSRC) (United Kingdom)
- 2016 Sparks Children's Medical Research Charity (United Kingdom)
- 2015 Canadian Institutes of Health Research Science Policy Fellowship Program
- 2013-2018 NSERC Visiting Scientists in a Government Laboratory program

2010 Diabetes UK

### Scientific peer reviewer

- 2018 National Academies of Sciences, Engineering, and Medicine. 2018. Harmonization of Approaches to Nutrient Reference Values: Applications to Young Children and Women of Reproductive Age. Washington, DC: The National Academies Press.
- 2018 Nutrition International-led Technical Consultation on Folate Status and NTD Prevention
- 2016 Canadian Council on Animal Care (CCAC) guidelines on: mice
- 2015 *Abstract reviewer*, Experimental Biology 2016
- 2015 *Abstract reviewer*, American Society for Nutrition's 5th Annual Advances and Controversies in Clinical Nutrition Conference
- 2009 *Poster competition judge*. Health Canada Science Forum, Ottawa, Ontario
- 2009-present Selected journals. Advances in Nutrition; American Journal of Clinical Nutrition; Annals of Nutrition and Metabolism; Biochemistry and Cell Biology; Birth Defects Research; British Journal of Nutrition; Diabetes Research and Clinical Practice; FASEB Journal; International Journal of Obesity; Journal of AOAC International; Journal of Developmental Origins of Health and Disease; Journal of Food Composition and Analysis; Journal of Nutrition; Journal of Toxicology and Environmental Health; Nature; Nutrients; Nutrition Reviews; PLOS One; Proceedings of the National Academies of Sciences

### Other representation and service

- 2022 *Participant (virtual)*, Government of Ethiopia – Nutrition International – University of California, Davis - Inception meeting and Workshop "Product Development and Market Introduction of Iodine-Folic Acid Double-Fortified Salt (DFS-IoFA) in Ethiopia"
- 2021 *International observer*, European Food Safety Authority Workshop on data and methodologies for establishing tolerable upper intake levels for vitamins and minerals
- 2014 *Canadian government representative*. "Exploring Scientific Evaluation and Intake Recommendations of Bioactive Compounds and the Public/Private Path to Get There" sponsored by the Alliance for Aging Research NGO and held at the National Academies of Sciences, Engineering and Medicine.
- 2011-2020 *Guest speaker* (Grades 5-12), Virtual Researcher on Call Program by Partners in Research
- 2010-2013 *Member*, Faculty of Graduate and Postdoctoral Studies, University of Ottawa
- 2010 *International observer*. NHANES Monitoring of Biomarkers of Folate and Vitamin B12 Status: Measurement Procedure Issues
- 2010 *Participant*. Workshop on preconception cohort studies in China. Ottawa Health Research Institute, Ottawa, Ontario
- 2010 *Participant*. 2<sup>nd</sup> Biennial First Nations, Inuit and Metis Health Research Meeting. Ottawa, Ontario
- 2009-2012 *Coordinator*. Bureau of Nutritional Sciences Seminar Series, Health Canada, Ottawa, Ontario

## **SOCIETY MEMBERSHIP**

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2021-present *Member*, American Association for the Advancement of Science  
 2014-present *Member*, Canadian Nutrition Society  
 2004-present *Member*, American Society for Nutrition

## **SUPERVISORY EXPERIENCE (DIRECT REPORTS)**

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### **Scientists**

2022-present Dr. Maureen Spill, Program Lead in Nutrition, Agriculture, Food and Nutrition Evidence Center, Texas A&M AgriLife  
 2018-2022 Dr. Hope Weiler, Senior Research Scientist, Health Canada  
 2015-2017 Dr. Linda Greene-Finestone, Senior Epidemiologist, Health Canada  
 2014-2022 Dr. Jesse Bertinato, Research Scientist, Health Canada  
 2014-2022 Dr. Marcia Cooper, Research Scientist, Health Canada

### **Administrative staff**

2022-present Patricia Quinones, Executive Assistant III, Agriculture, Food and Nutrition Evidence Center, Texas A&M AgriLife

### **Technical Staff**

2022-present Jonathon Weiss, Laboratory Manager, Texas A&M AgriLife Research  
 2022 Jeremiah Gaudet, Senior Research Technician, Health Canada  
 2021 Esther Munezero, Research Technician, Health Canada  
 2020-2021 Lily Fu, Research Technician, Health Canada  
 2020-2022 Angie Bielecki, Senior Research Technician, Health Canada  
 2019-2020 Stephanie Diaz G., Research Technician, Health Canada  
 2017 Danielle Leblanc, Research Technician, Health Canada  
 2016-2018 Rana Zoka, Research Technician, Health Canada  
 2014-2016, 2020-2022 Fernando Matias, Senior Research Technician, Health Canada  
 2014-2022 Philip Griffin, Senior Research Technician, Health Canada  
 2014-2018 Kurtis Sarafin, Senior Research Technician, Health Canada  
 2014-2017 Louise Plouffe, Senior Research Technician, Health Canada  
 2008-2020 Nathalie Behan, Senior Research Technician, Health Canada

## **MENTORING**

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### **Graduate and post-doctorate**

2019-2021 Esther Munezero, M.Sc. in Biochemistry, Carleton University (Carleton University Dept. of Biology Outstanding Thesis Excellence Award, Nominated for Carleton University Medal for Best Master's Thesis)  
 2017-2019 Stephanie Diaz Gonzalez, M.Sc. in Biology with Minor in Bioinformatics, Carleton University  
 2015-2022 Maryse Lessard, M.Sc., Ph.D. candidate, Université Laval (co-supervisor)  
 2015-2017 Danielle Leblanc, M.Sc. Biology, Carleton University (CIHR Frederick Banting and Charles Best Canada Graduate Scholarship; Carleton University Medal for Best Master's Thesis)  
 2014-2019 Myy Mikwar, Ph.D. in Biology, Carleton University



- 2013-2015 Carolyne Moussa, M.Sc. Biology, Carleton University (CIHR IHDCYH Training Program in Reproduction, Early Development and the Impact on Health)  
 2012-2015 Ian Zinck, PhD, Post-Doctoral Fellow (NSERC Visiting Fellowship)  
 2010-2013 Mahmoud Hosseini, M.Sc. Biochemistry, University of Ottawa

### **Undergraduate**

- 2019 Raisa (Isha) Rahman, B.Sc. Co-Op student, Carleton University  
 2018-2019 Hauna Sheyholislami, B.Sc. Honours in Biology, Carleton University  
 2018 Esther Munezero, B.Sc. Honours in Biochemistry, Carleton University  
 2015-2016 Camille Boucher-Hamelin, B.Sc. Honours student, University of Ottawa  
 2015-2016 Rachael Page, Co-Op and Directed Special Studies, B.Sc. Carleton University  
 2014-2015 Danielle Leblanc, Honours student, B.Sc. Carleton University  
 2013 Won-June (Alex) Lee, Dean's Summer Research Internship, Carleton University  
 2013 Nicole Sarsons, Student volunteer, B.Sc. in Life Sciences, McMaster University  
 2011-2013 Carolyne Moussa, Co-Op & Honours student, University of Ottawa  
 2011-2012 John Wyatt, Honours student, University of Ottawa  
 2010-2013 Rogeh Habashi, NSERC USRA Summer Scholar (X2) and B.Sc. Honours in Biology, Carleton University  
 2010 Philippe Jollette, Co-Op student (2 terms), University of Ottawa  
 2009-2010 Bevan Pearce, Honours student, University of Ottawa

### **High school**

- 2017 Sara Gauthier, High School Co-Op student, Foundation for Student Science and Technology  
 2016 Jamaal Stewart, High School Co-Op student, Foundation for Student Science and Technology  
 2014 Mikell Blain-Rogers, High School Co-Op student, Foundation for Student Science and Technology

### **Graduate thesis advisory committee**

- 2021-present Hauna Sheyholislami, Ph.D. candidate, Health Sciences, Carleton University  
 2021-present Jana Palaniyandi, M.Sc. candidate, Biology, Carleton University  
 2021-present Josh Alampi, Ph.D. candidate, Epidemiology, Simon Fraser University  
 2020-2022 Marisa Patti, Ph.D. in Epidemiology, Brown University  
 2017-2018 Joanna Orzechowska, M.Sc. Biology, Carleton University  
 2017-2021 Kyla Young, M.Sc. in Cellular and Molecular Medicine, University of Ottawa  
 2015-2019 Shazia Chaudhry, Ph.D. in Epidemiology, University of Ottawa  
 2015-2018 Haya Alomaim, M.Sc. in Biochemistry, University of Ottawa  
 2014-2018 Georges Kanaan, Ph.D. in Biochemistry, University of Ottawa  
 2012-2017 Marc Beal, Ph.D. in Biology, Carleton University  
 2012-2015 Duale Ahmed, M.Sc. in Biology, Carleton University  
 2012-2015 Edgar Abouassaf, Ph.D. in Biology, Carleton University  
 2011-2013 Emily Hopwood, M.Sc. in Biology, Carleton University  
 2010-2012 Breanne Swayne, M.Sc. in Biology, Carleton University

### **Graduate comprehensive examiner or thesis defense committee:**

- 2018 Chris Lavergne, M.Sc. in Biochemistry, Thesis defence, University of Ottawa

- 2017 Phanie Charest, Ph.D. candidate, Comprehensive examiner, Université Laval  
2016 Viktoria Samakai, M.Sc. Biology, Thesis defence, Carleton University  
2011 Andrew Syrett, M.Sc. in Biochemistry, Thesis defence, University of Ottawa  
2010 Nikita Rayne, M.Sc. in Biology, Thesis defence, Carleton University

**TEACHING**

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- 2022 *Lecturer*, HSS4313 Integrative Approaches in Health Biosciences, University of Ottawa  
2017-2018 *Lecturer*, BIOC4009 Biochemistry of Disease, Carleton University  
2016-2018 *Lecturer*, HLTH 4401 Maternal and Prenatal Determinants of Health, Carleton University  
2015/2017/2019/2021 *Guest lecturer*, NS6200: Translational Research and Evidence-based Policy and Practice in Nutrition, Cornell University  
2014 *Lecturer*. HLTH 5400 Graduate course Interdisciplinary Problems in Health in the Health: Science, Technology and Policy Program, Carleton University  
2013 *Lecturer*, TMM3103 Metabolic Pathways of Human Disease, University of Ottawa  
2012 *Lecturer*. NUT3703 Nutrition Through the Life Cycle, University of Ottawa  
2011-2013 *Lecturer/evaluator*. BCH4932 Biochemistry Seminars. University of Ottawa, Ontario  
2011/2013/2015 *Lecturer*. BCH8106 Advanced Topics in Nutrition and Regulation of Metabolism. University of Ottawa, Ontario  
2010-2015 *Lecturer*. BCH3120 General intermediary metabolism. University of Ottawa, Ontario  
2010-2011 *Lecturer*, BIOL4301 Current Topics in Biotechnology, Carleton University