

JUDITH RAFAELITA B. BORJA

EDUCATION

Ph.D. Nutrition, School of Public Health, University of North Carolina at Chapel Hill (UNC-CH) (1998)

Dissertation: *Young Maternal Age at First Pregnancy and Infant Growth*

Adviser: Professor Linda S. Adair

Fellowships and grants:

Nutrition Research Graduate Fellowship, Institute of Nutrition, UNC-CH

On-Campus Dissertation Fellowship, Graduate School, UNC-CH

Research Residency Grant, Andrew Mellon Foundation

M.S. in Applied Nutrition, University of the Philippines at Los Baños (1991)

Thesis: *Factors Affecting Nutritional Status of Adolescent Mothers in Metro Cebu*

Adviser: Professor Corazon VC. Barba

Scholarship:

Southeast Asian Regional Center for Graduate Study and Research in Agriculture

Computer Programming/Systems Analysis and Design (1984)

National Computer Institute, Quezon City, Philippines

B.S. Nutrition and Dietetics (1980) (Magna Cum Laude)

University of San Carlos, Cebu City, Philippines

AWARDS:

7th Place, Nutritionist-Dietitian Licensure Examination, 1980

Nutrition Research Fellow Awardee, Philippine Association of Nutrition, July 2012

University of San Carlos Outstanding Alumnus, *Semper Fidelis* Awardee for *Scientia*, August 2012

Alumni Achievement Awardee for Food and Nutrition Research, Institute of Human Nutrition and Food, College of Human Ecology, University of the Philippines at Los Baños, July 2013

Delta Omega Alumnus Awardee, Gillings School of Global Public Health, University of North Carolina at Chapel Hill, April 2014

Nutritionist-Dietitians' Association of the Philippines, Clara Ruth Darby Memorial Lectureship Award, February 2015

PROFESSIONAL EXPERIENCE

Consultant-Investigator
USC-Office of Population Studies Foundation (OPS)
University of San Carlos
Talamban Campus, Cebu City, Philippines
Tel. No.: (63) 032-3460102 Fax. No.: (63) 032-3466050; E-mail: judithborja@gmail.com

Previously held positions at OPS:
Deputy Director (2019)
Director (2013-2018)
Deputy Director (2008-2013)
Research Fellow (1998 to date)
Nutritionist/Research Associate (1985 to 1998)

Adjunct Assistant Professor (2012 to date)
Department of Nutrition
Gillings School of Global Public Health
University of North Carolina at Chapel Hill
North Carolina, USA

Research Associate, Project Manager (August 2002- March 2008)
Carolina Population Center, University of North Carolina at Chapel Hill

Asst. Professor 1 with PhD (2000 to date)
Asst. Instructor (1985-1987)
University of San Carlos, Cebu City, Philippines

Systems Analyst/Programmer (1983-1985)
Social Security System, Quezon City, Philippines

RESEARCH GRANTS/PROJECTS

Lead Investigator. Longitudinal Cohort Study on the Filipino Child. Funded by the United Nations Population Fund (UNFPA). This 15-year prospective study on a cohort of 10-year old Filipino boys and girls aims to measure how the cohort and their families fare and respond over time to the programs implemented in the 15-year (2016-2030) Sustainable Development Goals Agenda of the United Nations.

Co-Investigator. A lifecourse perspective on adolescent nutrition in the Philippines (subcontract with the University of North Carolina at Chapel Hill, funded by the Sackler Institute for Nutrition Science) (2015-2016).

Project Manager, *Post-Typhoon Yolanda Reproductive Health and GBV Assessment*, Funded by the United Nations Population Fund (UNFPA) (December 2013-January 2014). This rapid assessment project provided critical data on 23 municipalities and cities which were severely affected by Super Typhoon Yolanda (Haiyan) for UNFPA's emergency humanitarian assistance to health facilities and women of reproductive age.

Co-investigator (with Jere Behrman, University of Pennsylvania) "Team 1000+ Saving

Brains: Economic Impacts of Poverty-Related Risk Factors”, Grand Challenges Canada (2012-2014).

OPS Lead Investigator (Principal Investigator: Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill). “Multidimensional pathways to healthy aging among Filipino women”. US National Institutes of Health (NIH). National Institute of Aging (2011-2016).

Project Manager, *Impact of early-stage education intervention on learning, human capital formation, and labor market outcomes in the Philippines. The Third Elementary Education Project Evaluation Survey*. Funded by the International Food Research and Policy Institute (April 2010-December 2010)

Co-investigator (with Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill). “Relating multiple dimensions of stress to CVD risk in Filipino adults”. Fogarty International Research Collaboration Award, NIH (2008-2013).

Co-investigator (with Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill). “Modeling the Developmental Origins of Adult Disease Risk Factors”. NIH (2008-2013).

Co-investigator (with Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill). “Biological, social, and environmental determinants of trajectories of health and functional outcomes among adult Filipino women”. Pilot program funded by the Demographic and Economics of Aging Research, UNC. (2007-2008).

Co-investigator (with Barbara Laraia and Margaret Bentley, University of North Carolina at Chapel Hill). “Food Security and Feeding Strategies. A study to examine the relationship between the food environment, food insecurity and infant feeding among first time African American mother-infant dyads”. Funded by the Southern Rural Development Center (2006-2007).

Project Manager, *Infant Care, Feeding, and Risk of Obesity Project*. Funded by the NIH Eunice Kennedy Shriver, National Institute of Child Health and Development (August 2002-March 2008)

Project Manager, *Effect of Health on Education and Work in Filipino Youth*. In collaboration with the University of Pennsylvania. Funded by NIH/Fogarty International Center (2001)

Co-investigator (with Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill and Wilhelm Flieger, Office of Population Studies, University of San Carlos): “*Unmet Needs for Adolescent Health Services in Metro Cebu, Philippines*”. Funded by the MEASURE Evaluation Project. (1998-2000).

Project Manager, *Indicators and Impact Evaluation of the Philippine ECD Project: A Study of the Effects of Early Childhood Interventions on Children’s Physiological, Cognitive and Social Development*. For the Department of Social Welfare and Development. Funded by the World Bank and the Asian Development Bank. (2000-2001)

Co-investigator (with Linda S. Adair, Carolina Population Center, University of North Carolina at Chapel Hill and Wilhelm Flieger, Office of Population Studies, University of San Carlos): *“How do Filipino adolescents make decisions about sexual behavior and family planning? Parent-child communication, maternal behavior and community influences on adolescent girls in Metro Cebu”*. Funded by the Andrew W. Mellon Foundation. (1998-2000).

Co-investigator: *“The effect of Mothercraft Classes on mothers' family planning practices”*. In collaboration with the University of the Philippines Population Institute and the Kaunlarang Ugnayan ng mga Mananaliksik Panlipunan, Inc. (1990-1992).

OTHER ACADEMIC POSITIONS/EXPERIENCES

Gateway Global Mentor, University of North Carolina Gillings School of Global Public Health (since 2014)

Philippine Population Review (official journal of the Philippine Population Association)
Editor-in-Chief, November 2013 to 2016
Editorial Board Member, 2016 to date

Reviewed for the following journals:

Asia Pacific Journal of Clinical Nutrition
Asia Pacific Migration Journal
BioMedical Central Health Services Research
British Medical Journal Open
Early Human Development
International Journal of Environmental Research and Public Health
Journal of Clinical Epidemiology
Journal of Research in Diabetes
Lancet Global Health
Philippine Journal of Nutrition
Philippine Quarterly of Culture and Society
Philippine Science Letters
Public Library of Science (PLOS) One

SELECTED PUBLICATIONS

44) Adair LS, Carba, DB, Lee NR, **Borja JB**, Stunting, IQ, and final school attainment in the Cebu Longitudinal Health and Nutrition Survey birth cohort. (2021). *Economics and Human Biology*. 42(2): <http://dx.doi.org/10.1016/j.ehb.2021.100999>

43) Kuzawa CW, Adair LS, Bechayda SA, **Borja JB**, Carba, DB, Duazo, PL, Eisenberg, DTA, Georgiev, AV, Gettler, LT, Lee NR, Quinn, EA, Rosenbaum, S, Rutherford, JN, Ryan, CP, McDade TW. (2020). Evolutionary life history theory as an organizing framework for cohort studies: insights from the Cebu Longitudinal Health and Nutrition Survey. *Ann Hum Biol*. 47(2):94-105: doi: 10.1080/03014460.2020.1742787.

42) McDade TW, **Borja JB**, Lee N, Aquino CT, Barrett T, Adair LS, Kuzawa CW. (2020). C-reactive protein response to influenza vaccination predicts cardiovascular disease risk in the Philippines. *Biodemography Soc Biol*. 65(1): 88-96.

doi:10.1080/19485565.2019.1597623.

41) Ragsdale HB, Kuzawa CW, **Borja JB**, Avila, JL, McDade TW. (2019). Regulation of inflammation during gestation and birth outcomes: Inflammatory cytokine balance predicts birth weight and length. *Am J Hum Biol.* 31(3): e23245. doi:10.1002/ajhb.23245.

40) Kuzawa CW, Barrett TM, **Borja JB**, Lee NR, Aquino CT, Adair LS, McDade TW. (2019). Ankle brachial index (ABI) in a cohort of older women in the Philippines: Prevalence of peripheral artery disease and predictors of ABI. *Am J Hum Biol.* 31(3):e23245. doi: 10.1002/ajhb.23245. Epub 2019 Apr 13. PMID:30980448

39) Adair LS, **Duazo P, Borja JB.** (2018). How overweight and obesity related to the development of functional limitations among Filipino women. *Geriatrics (Basel)*, 3(4), doi: 10.3390/geriatrics3040063. Epub 2018 Sep 27.

38) **Feranil A, J Borja and N Mayol.** (2017) The Cebu Longitudinal Health and Nutrition Survey (CLHNS): Local Evidence of the Importance of the First 1,000 Days, in Cebu Almanac, The 2017 Report, University of San Carlos Press.

37) McDade TW, Jones MJ, Miller G, **Borja J**, Kobor MS, Kuzawa CW. (2017). Birth weight and postnatal microbial exposures predict the distribution of peripheral blood leukocyte subsets in young adults in the Philippines. *J Dev Orig Health Dis.* 2017 Oct 11:1-10. doi: 10.1017/S2040174417000794. [Epub ahead of print]

36) Graff. M.,..... **Borja, J.B.**..... Kilpeläinen, T.O. (2017). Genome-wide physical activity interactions in adiposity - A meta-analysis of 200,452 adults. *PLoS Genet* 13(4):e1006528. doi: 10.1371/journal.pgen.1006528.

35) Liu, X., Berhman, J.R., Stein, A.D., Adair, L.S., Bhargava, S. K., **Borja, J.B.**, Da Silveira, M.F., Horta, B.L., Martorell, R., Norris, S.A., Richter, L.M. & Sachdev, H.S. (2017). Prenatal care and child growth and schooling in four low- and medium-income countries. *PLOS One*, 12(2), e0171299. doi:10.1371/journal.pone.0171299.

34) Eisenberg, D.T.A, **Borja, J.B.**, Hayes, M.G. & Kuzawa, CW. (2017). Early life infection, but not breastfeeding, predicts adult blood telomere lengths in the Philippines. *American Journal of Human Biology*, Jan 25, doi: 10.1002/ajhb.22962. [Epub ahead of print].

33) Horikoshi, M.....**Borja, J.B.**....Freathy, R.M. (2016). Genome-wide associations for birth weight and correlations with adult disease. *Nature*, 538(7624):248-252.

32) Puentes E, Wang F, Behrman J, Cunha F, Hoddinott J, Maluccio JA, Adair LS, **Borja JB**, Martorell R, Stein AD. (2016). Early life height and weight production functions with endogenous energy and protein inputs. *Economics and Human Biology*, 22: 65-81.

31) Mcdade, T.W., **Borja. J.B.**, Largado, F., Adair, L.S., Kuzawa, C.W. (2016). Adiposity and chronic inflammation in young women predict inflammation during normal pregnancy in the Philippines. *Journal of Nutrition*, 142(2), 353-357.

- 30) Chen F, Bao L, Shattuck RM, **Borja JB**, Gultiano S. (2015). Implications of changes in family structure and composition for the psychological well-being of Filipino women in middle and later years. *Research on Aging*, 1-25.
- 29) Bethancourt, H.J., Kratz, M., Beresford, S.A.A., Hayes, M.G., Kuzawa C.W., Duazo, P.L., **Borja, J.B.**, & Eisenberg, D.T.A. (2017). No association between blood telomere length and longitudinally assessed diet or adiposity in a young adult Filipino population. *European Journal of Nutrition*, 56(1), 295-308.
- 28) McDade, T.W, **Borja, J.B.**, Kuzawa. C.W., Perez. T.L.L., & Adair, L.S. (2015). C-reactive protein response to influenza vaccination as a model of mild inflammatory stimulation in the Philippines. *Vaccine*, 33, 2004-2008.
- 27). Quinn, E., Largado, F., **Borja, J.B.**, & Kuzawa, C.W. (2015). Maternal characteristics associated with milk leptin content in a sample of Filipino women and associations of milk leptin with infant weight for age. *Journal of Human Lactation*, 31(2), 273-281.
- 26). Yoon J, Tooba R, **Borja J**, Largado F, Quinn EA. *Lower hemoglobin levels in first time mothers from Cebu, Philippines*. *Am J Hum Biol*. 2014 Feb 18. [Epub ahead of print]
- 25). **Borja, J.B.** (2013). The impact of Early Nutrition on Health: Key findings from the Cebu Longitudinal Health and Nutrition Survey. *Malaysian Journal of Nutrition*, 19(1),1-8.
- 24) McDade, T.W., **Borja, J.B.**, Adair, L.S., Kuzawa, C. (2013). Depressive symptoms are not associated with inflammation in younger and older adults in the Philippines. *Evolution, Medicine, and Public Health*, 2013(1),18-23.
- 23) Dahly DL, Gordon-Larsen P, Emch M, **Borja J**, Adair LS. *The spatial distribution of overweight and obesity among a birth cohort of young adult Filipinos (Cebu Philippines, 2005): an application of the Kulldorff spatial scan statistic*. *Nutrition & Diabetes* 2013 3, e80; doi:10.1038/nutd.2013.21; published online 1 July 2013
- 22) Kuzawa CW, Adair LS, **Borja J**, McDade TW. *C-reactive protein by pregnancy and lactational status among Filipino young adult women*. *Am J Hum Biol*. 2013 Jan-Feb;25(1):131-4.
- 21) McDade, T.W., Hoke, M., **Borja, J.B.**, Adair, L.S. & Kuzawa, C.W. (2013). Do environments in infancy moderate the association between stress and inflammation in adulthood? Initial evidence from a birth cohort in the Philippines. *Brain, Behavior, and Immunity*, 31(2013), 23–30.
- 20) Agustin SS, Avila JL, Bas IN, Feranil AB, **Borja JB**, Adair LS. Why Filipinos defy stress: A qualitative study on how Filipino men and women perceive and cope with stress. *Philippine Population Review* 2012 11(1):72-94.
- 19) Wu, Y, TW McDade CW Kuzawa, **J Borja**, Y Li, LS Adair, KL Mohlke and LA Lange. *Genome-wide Association with C-reactive protein levels in CLHNS: Evidence for the CRP andHNF1A Loci and their interaction with Exposure to a Pathogenic Environment*. *Inflammation* 2012 Apr;35(2):574-83.

- 18) Tallman PS, Kuzawa C, Adair L, **Borja JB**, McDade TW. *Microbial exposures in infancy predict levels of the immunoregulatory cytokine interleukin-4 in Filipino young adults.* Am J Hum Biol. 2012; 24(4):446-53.
- 17) Croteau-Chonka DC, Y Wu, Y Li, MP Fogarty, LA Lange, CW Kuzawa, TW McDade, **JB Borja**, J Luo, O Abdelbaky, TP Combs, LS Adair, EM Lange, KL Mohlke. *Population-specific coding variant underlies genome-wide association with adiponectin level.* Hum Mol Genet. 2012 Jan 15;21(2):463-71. Epub 2011 Oct 18.
- 16). McDade TW, Tallman PS, Adair LS, **Borja J**, Kuzawa CW. *Comparative insights into the regulation of inflammation: levels and predictors of interleukin 6 and interleukin 10 in young adults in the Philippines.* Am J Phys Anthropol. 2011 Nov;146(3):373-84. doi: 10.1002/ajpa.21586. Epub 2011 Aug 24.
- 15) Bryant M, Stevens J, Wang L, Tabak R, **Borja J**, Bentley ME. *Relationship between home fruit and vegetable availability and infant and maternal dietary intake in African-American Families: Evidence from the Exhaustive Home Food Inventory.* J Am Diet Assoc 2011 Oct. 111(10):1491-7.
- 14) Adair, L.S., Popkin. B.M., Akin, J.S., Guilkey, D.K., Gultiano, S., **Borja, J.B.**, Perez, L., Kuzawa, C.W., McDade, T., & Hindin, M. (2011). Cohorts Profile: The Cebu Longitudinal Health and Nutrition Survey. International Journal of Epidemiology, 40, 619-25.
- 13) Kilpeläinen TO, M den Hoed , KK Ong, A Grøntved, S Brage, Early Growth Genetics Consortium, Jameson K, Cooper C, Khaw KT, Ekelund U, Wareham NJ, Loos RJ, **J Borja** et al. *Obesity-susceptibility loci have a limited influence on birth weight: a meta-analysis of up to 28,219 individuals.* Am J Clin Nutr. 2011 Apr;93(4):851-60. Epub 2011 Jan 19.
- 12) Wasser H, Bentley M, **Borja J**, Davis Goldman B, Thompson A, Slining M, Adair L. *Infants perceived as “fussy” are more likely to receive complementary foods before 4 months.* Public Health Nutr. 2011 Feb;14(2):314-8. Epub 2010 Jul 6.
- 11) Fall, C.H., **Borja, J.B.**, Osmond, C., Richter, L., Bhargava, S.K., Martorell, R., Stein, A.D., Barros, F.C., Victora, C.G, & COHORTS group.(2011). Infant-feeding patterns and cardiovascular risk factors in young adulthood: data from five cohorts in low- and middle-income countries. International Journal of Epidemiology, 40(1), 47-62.
- 10) Stevens J, Bryant M, Wang L, **Borja J**, Bentley ME. *Exhaustive measurement of food items in the home using a universal product code scanner.* Public Health Nutr. 2011 Feb;14(2):314-8. Epub 2010 Jul 6.
- 9) Slining M, Adair LS. Goldman BD, **Borja JB**, Bentley M. *Infant overweight is associated with delayed motor and development.* J Pediatr. 2010 Jul;157(1):20-25.e1. Epub 2010 Mar 15.
- 8) Thompson AL, Mendez MA, **Borja JB**, Adair LS, Zimmer CR, Bentley ME.. *Development and validation of the Infant Feeding Style Questionnaire* Appetite. 2009 Oct;53(2):210-21. Epub 2009 Jul 1.

7) Slining M, Adair LS, Goldman BD, **Borja JB**, Bentley M. *Infant temperament contributes to early infant growth: A prospective cohort of African American infants* Int J Behav Nutr Phys Act. 2009 Aug 5;6:51. PMC2729723

6) Laraia BA, **Borja JB**, Bentley ME. *Grandmothers, fathers and depressive symptoms are associated with food insecurity among low income first-time African-American mothers in North Carolina.* J Am Diet Assoc. 2009 Jun;109(6):1042-7.

5) Sacco LM, Bentley ME, Carby-Shields K, **Borja JB**, Goldman BD. *Assessment of infant feeding styles among low income African American mothers: comparing reported and observed behaviors.* Appetite. 2007 Jul;49(1):131-40. Epub 2007 Jan 30.

4) Ghuman, Sharon; Behrman, Jere R.; **Borja, Judith B.**; Gultiano, Socorro; King, Elizabeth M. *Family background, service providers, and early childhood development in the Philippines: Proxies and interactions* Economic Development and Cultural Change 2005 54(1): 129-164

- 3) **Borja, Judith B.** and Linda S. Adair. 2003. *Assessing the net effects of young maternal age on birth weight among Filipinos.* Am J Hum Biol. 2003 Nov-Dec;15(6):733-40.
- 2) Adair, L.S., Kuzawa, C.W., & **Borja, J.B.** (2001). Maternal energy stores and diet composition during pregnancy program adolescent blood pressure. *Circulation*, 104(9), 1034-1039.
- 1) **Borja, Judith B.** and Barba, Corazon V.C. Assessing the risks associated with adolescent pregnancy in a developing world context. *Philippine Quarterly of Culture and Society* 2001 9(1/2). San Carlos Publications, Cebu City, Philippines.

Community Outreach Activities

Dr. Borja led OPS in providing humanitarian assistance to those affected in the October 15, 2013 earthquake (Cebu and Bohol) and the November 8, 2013 super typhoon (Cebu and Leyte). With funds raised among OPS employees and its international community of research collaborators and colleagues, OPS has a) contributed rice, canned goods and bottled water to various relief missions sent by the University of San Carlos to the disaster areas, b) provided meals and medicines to typhoon victims from Leyte who sought refuge in Cebu and c) supported house rehabilitation projects for 7 families affected by the earthquake in Loay, Bohol and 2 families affected by the typhoon in Tabogon, Cebu, and d) conducted a livelihood course/cooking demo to 20 women in Tabogon Cebu.

Dr. Borja also led the work in the translation (into Visayan and Waray) of US National Child Traumatic Stress Network (NCTSN) stories authored by Dr. Chandra Ghosh Ippen of the University of California San Francisco for children who experienced earthquakes and typhoons. Translated stories will be uploaded to the NCTSN website and made available for free to the public.

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Philippine Population Association.
Trustee (2013-2016)
President (2015)

Philippine Association of Nutrition
Research Fellow
Cebu Chapter President (2015), Advisory Board member (present)

American Society of Nutrition
Member

Delta Omega Honorary Society in Public Health (Theta Chapter)
Member