

Annie Green Howard

CONTACT INFORMATION Department of Biostatistics (919)-962-6164
Gillings School of Global Public Health
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The University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7420, USA

RESEARCH INTERESTS Missing data, longitudinal and correlated data, structural equation models, latent variables, environment and population health, cardiovascular disease, global health, population surveys

EDUCATION **The University of North Carolina at Chapel Hill**, Chapel Hill, North Carolina, USA
Ph.D., Biostatistics, May 2012
Furman University, Greenville, South Carolina, USA
B.S., Mathematics and History, *cum laude*, June 2005

PROFESSIONAL EXPERIENCE **Department of Biostatistics**
Carolina Population Center
Gillings School of Global Public Health
The University of North Carolina at Chapel Hill
Assistant Professor 2012 to 2019
Associate Professor 2019 to Present
Carolina Population Center Fellow 2018 to Present
Collaborative Studies Coordinating Center
The University of North Carolina at Chapel Hill
Post Doctoral Research Associate Summer 2012
Graduate Research Assistant 2007-2012
Department of Biostatistical Sciences
Division of Public Health Sciences
Wake Forest University School of Medicine
Biostatistician I 2010-2012

Clinical Research Collaboration Network (CRCN)
Muang district, Nonthaburi, Thailand

Biostatistician

Summer 2009

CONTINUING
EDUCATION

**Ten-Day Day Seminar on the Epidemiology and Prevention of
Cardiovascular Disease**

American Heart Association

August 2013

HONORS &
AWARDS

Junior Faculty Development Award, University of North Carolina at
Chapel Hill, 2017

New Investigator Travel Award, Epidemiology and Prevention/Nutrition
Physical Activity and Metabolism 2014 Scientific Session, American
Heart Association

Delta Omega Recognition of Service Award for the Department of Bio-
statistics, 2007

MEMBERSHIPS

Council on Epidemiology and Prevention, American Heart Association

Council on Lifestyle and Cardiometabolic Health, American Heart As-
sociation

American Statistical Association

The Obesity Society

PEER
REVIEWED
PUBLICATIONS

* Denotes First Authorship

,**Indicates student first-author

1. Avery, C. L., Howard, A. G., Nichols, H. B. "Comparison of 20-
Year Obesity-Associated Cancer Mortality Trends With Heart Dis-
ease Mortality Trends in the US." *JAMA Network Open*, 4(5):e218356-
e218356. (2021).

2. Avery, C.L., **Howard, A.G.**, Nichols, H.B. "Trends in US Cancer and Heart Disease Mortality, 1999–2018" *Circulation* 143(3):287-288 (2021).
3. Wang, Y., Wang, H., **Howard, A.G.**, Tsilimigras, M.C., Avery, C.L., Meyer, K.A., Sha, W., Sun, S., Zhang, J., Su, C. and Wang, Z. "Gut Microbiota and Host Plasma Metabolites in Association with Blood Pressure in Chinese Adults" *Hypertension* 77(2):706-717 (2021).
4. Peng, K., Rodríguez, D.A., Peterson, M., Braun, L.M., **Howard, A.G.**, Lewis, C.E., Shikany, J.M. and Gordon-Larsen, P. "GIS-Based Home Neighborhood Food Outlet Counts, Street Connectivity, and Frequency of Use of Neighborhood Restaurants and Food Stores" *Journal of Urban Health* 97(2):213-225 (2020).
5. Sun, S., Wang, H., Tsilimigras, M.C., **Howard, A.G.**, Sha, W., Zhang, J., Su, C., Wang, Z., Du, S., Sioda, M. and Fouladi, F., 2020. Does geographical variation confound the relationship between host factors and the human gut microbiota: a population-based study in China. *BMJ open* 10(11):e038163 (2020)
6. Wang, Y., Wang, H., **Howard, A.G.**, Tsilimigras, M.C., Avery, C.L., Meyer, K.A., Sha, W., Sun, S., Zhang, J., Su, C. and Wang, Z. "Associations of sodium and potassium consumption with the gut microbiota and host metabolites in a population-based study in Chinese adults" *The American Journal of Clinical Nutrition* 112(6):1599-1612 (2020).
7. Justice, A.E., Chittoor, G., Gondalia, R., Melton, P.E., Lim, E., Grove, M.L., Whitsel, E.A., Liu, C.T., Cupples, L.A., Fernandez-Rhodes, L., Guan, W., Bressler, J., Fornage, M., Boerwinkle, E., Li, Y., Demerath, E., Heard-Costa, N., Levy, D., Stewart, J.D., Baccarelli, A., Hou, L., Conneely, K., Mori, T.A., Beilin, L.J., Huang, R., Gordon-Larsen, P., **Howard, A.G.**, North, K.E. "Methylome-wide association study of central adiposity implicates genes involved in immune and endocrine systems" *Epigenomics*, 12(17): 1483-1499 (2020).
8. Von Holle, A., North, K.E., Gahagan, S., Burrows, R., Blanco, R., Lozoff, B., **Howard, A.G.**, Justice, A., Graff, M. "Sociodemographic predictors of early postnatal growth: evidence from a Chilean infancy cohort" *BMJ Open* 10(6):e033695 (2020).
9. Wang, Y., **Howard, A.G.**, Adair, L.S., Wang, H., Avery, C.L. and Gordon-Larsen, P. "Waist circumference change is associated with blood pressure change independent of BMI change" *Obesity* 28(1): 146-153 (2020).

10. Wang, Y., Wang, H., **Howard, A.G.**, Meyer, K.A., Tsilimigras, M.C., Avery, C.L., Sha, W., Sun, S., Zhang, J., Su, C. and Wang, Z. "Circulating short-chain fatty acids are positively associated with adiposity measures in Chinese adults" *Nutrients* 12(7):2127 (2020).
11. Wang Y, Sha W, Wang H, Howard AG, Tsilimigras MCB, Zhang J, Su C, Wang Z, Zhang B, Fodor AA, Gordon-Larsen P. "Urbanization in China is associated with pronounced perturbation of plasma metabolites" *Metabolomics* 16(10):103 (2020).
12. Spracklen C.N., Horikoshi M., Kim YJ, Lin K, Bragg F, Moon S, Suzuki K, Tam CHT, Tabara Y, Kwak SH, Takeuchi F, Long J, Lim VJY, Chai JF, Chen CH, Nakatochi M, Yao J, Choi HS, Iyengar AK, Perrin HJ, Brotman SM, van de Bunt M, Gloyn AL, Below JE, Boehnke M, Bowden DW, Chambers JC, Mahajan A, McCarthy MI, Ng MCY, Petty LE, Zhang W, Morris AP, Adair LS, Akiyama M, Bian Z, Chan JCN, Chang LC, Chee ML, Chen YI, Chen YT, Chen Z, Chuang LM, Du S, Gordon-Larsen P, Gross M, Guo X, Guo Y, Han S, **Howard AG**, Huang W, Hung YJ, Hwang MY, Hwu CM, Ichihara S, Isono M, Jang HM, Jiang G, Jonas JB, Kamatani Y, Katsuya T, Kawaguchi T, Khor CC, Kohara K, Lee MS, Lee NR, Li L, Liu J, Luk AO, Lv J, Okada Y, Pereira MA, Sabanayagam C, Shi J, Shin DM, So WY, Takahashi A, Tomlinson B, Tsai FJ, van Dam RM, Xiang YB, Yamamoto K, Yamauchi T, Yoon K, Yu C, Yuan JM, Zhang L, Zheng W, Igase M, Cho YS, Rotter JI, Wang YX, Sheu WHH, Yokota M, Wu JY, Cheng CY, Wong TY, Shu XO, Kato N, Park KS, Tai ES, Matsuda F, Koh WP, Ma RCW, Maeda S, Millwood IY, Lee J, Kadowaki T, Walters RG, Kim BJ, Mohlke KL, Sim X. "Identification of type 2 diabetes loci in 433,540 East Asian individuals" *Nature* 582(7811):240-245 (2020).
13. Blette, B.** , **Howard, A.G.**, Frerichs, L.M. "High school physical activity and nutrition policy: Summarizing changes over time using latent class analysis" *American Journal of Preventive Medicine* 57(3):e69-e76 (2019)
14. Inoue, Y., Yazawa, A., **Howard, A.G.**, Kondo, K., Gordon-Larsen, P. "Relative deprivation of assets defined at multiple geographic scales, perceived stress and self-rated health in China" *Health and Place* 58:102117 (2019).
15. Wang, Y., Wang, H., **Howard, A.G.**, Adair, L.S., Popkin, B.M., Su, C., Du, W., Zhang, B. and Gordon-Larsen, P. "Six-Year Incidence of Cardiometabolic Risk Factors in a Population-Based Cohort of Chinese Adults Followed From 2009 to 2015" *Journal of the American Heart Association* 8(12):e011368 (2019).

16. Aburto, T.C., Gordon-Larsen, P., Poti, J.M., **Howard, A.G.**, Adair, L.S., Avery, C.L. and Popkin, B.M. "Is a Hypertension Diagnosis Associated With Improved Dietary Outcomes Within 2 to 4 Years? A Fixed-Effects Analysis From the China Health and Nutrition Survey" *Journal of the American Heart Association* 8(21):e012703 (2019).
 17. Nguyen, N., Powers, K.A., Miller, W.C., **Howard, A.G.**, Halpern, C.T., Hughes, J.P., Wang, J. Twine, R. Gomez-Olive, X., MacPhail, C., Kahn, K. Pettifor, A.E. "Sexual Partner Types and Incident HIV Infection among Rural South African Adolescent Girls and Young Women Enrolled in HPTN 068: A Latent Class Analysis" *Journal of Acquired Immune Deficiency Syndromes* 82(1):24-33 (2019)
 18. Inoue, Y., **Howard, A.G.**, Stickley, A., Yazawa, A., Gordon-Larsen, P. "Sex and racial/ethnic differences in the association between childhood attention-deficit/hyperactivity disorder symptom subtypes and body mass index in the transition from adolescence to adulthood in the United States" *Pediatric Obesity* 14(5):e12498 (2019).
 19. Rubenstein, E., Wiggins, L.D., Schieve, L.A., Bradley, C., DiGiuseppi, C., Moody, E., Pandey, J., Pretzel, R.E., **Howard, A.G.**, Olshan, A.F., Pence, B.W. "Associations between parental broader autism phenotype and child autism spectrum disorder phenotype in the Study to Explore Early Development." *Autism* 23(2):436-448 (2019).
 20. Eudy, A., Siega-Riz, A.M., Engel, S.M., Franceschini, N., **Howard, A.G.**, Clowse, M.E.B., Petri, M. "Preconceptional cardiovascular health and pregnancy outcomes in women with systemic lupus erythematosus" *The Journal of Rheumatology* 46(1):70-77 (2019).
- Inoue, Y., **Howard, A.G.**, Qin, B., Yazawa, A., Stickley, A. and Gordon-Larsen, P., "The association between family members' migration and cognitive function among people left behind in China" *PloS one* 14(9):e0222867 (2019).
21. Inoue, Y., Howard, A.G., Thompson, A.L. and Gordon-Larsen, P., "Secular change in the association between urbanisation and abdominal adiposity in China (1993–2011)" *Epidemiol Community Health* 72(6):484-490 (2018).
 22. Fernandez-Rhodes, F., **Howard, A.G.**, Graff, M., Isasi, C.R., Highland, H., Young, K.L., Parra, E., Below, J.E., Qi, Q., Kaplan, R.C., Justice, A.E., Papnicolaou, G., Laurie, C.C, Grant, S.F., Haiman, C., Loos, R.J.F., North, K.E. "Complex Patterns of Direct and Indirect Association between the Transcription Factor-7 Like 2 Gene, Body Mass Index and Type 2 Diabetes Diagnosis in Adulthood in the

- Hispanic Community Health Study/Study of Latinos” *BMC Obesity* 5(1):26 (2018).
23. Fernandez-Rhodes, L., **Howard, A.G.**, Tao, R., Young, K.L., Graff, M., Aiello, A.E., North, K.E., Justice, A.E. ”Characterization of the contribution of shared environmental and genetic factors to metabolic syndrome methylation heritability and familial correlations.” *BMC Genetics*19(Suppl 1):69 (2018).
 24. Justice, A.E., **Howard, A.G.**, Fernandez-Rhodes, L., Graff, M., Tao, R., North, K.E. “Direct and indirect genetic effects on triglycerides through Omics and correlated phenotypes” *BMC Proceedings* 12(Suppl 9):22 (2018).
 25. Oliver-Williams, C., **Howard, A.G.**, Navas-Acien, A., Howard, B.V., Plaza-Tellez, M., Franceschini, N. ”Cadmium body burden, hypertension, and changes in blood pressure over time: results from a prospective cohort study in American Indians” *Journal of the American Society of Hypertension* 12(6):426-437 (2018).
 26. Eudy, A., Siega-Riz, A.M., Engel, S.M., Franceschini, N., **Howard, A.G.**, Clowse, M., Petri, M. “Effect of pregnancy on disease flares in patients with systemic lupus erythematosus” *Annals of the Rheumatic Diseases* 77(6):855-860 (2018).
 27. Inoue, Y., **Howard, A.G.**, Thompson, A.L., Gordon-Larsen, P. ”Secular Change in the association between urbanisation and abdominal adiposity in China (1993-2011)” *Journal of Epidemiology and Community Health* 72(6):484-490 (2018).
 28. Feld, J., Zukowski, L., **Howard, A.G.**, Giuliani, C., Altmann, L., Najafi, B., Plummer, P. “Relationship between dual-task gait speed and walking activity post stroke” *Stroke* 49(5):1296-1298 (2018).
 29. Dearth-Wesley, T., **Howard, A.G.**, Wang, H., Zhang, B., Popkin, B.M. “Trends in domain-specific physical activity and sedentary behaviors among Chinese school children, 2004-2011.” *International Journal of Behavioral Nutrition and Physical Activity* 14(1):141 (2017).
 30. Li, Y., Ley, S.H., Vasanti, M., **Howard, A.G.**, He, Y., Hu, F.B. “Time Trends of Dietary and Lifestyle Factors and Their Potential Impact on Diabetes Burden in China.” *Diabetes Care* 40(12):1685-1694 (2017).
 31. Winglee, K., **Howard, A.G.**, Sha, W., Gharaibeh, R.Z., Liu, J., Jin, D., Fodor, A.A., Gordon-Larsen, P. “Recent Urbanization in China Is Correlated With a Westernized Microbiome Encoding Increased Virulence and Antibiotic Resistance Genes” *Microbiome* 5(1):121 (2017).

32. Gordon-Larsen, P., Attard, S.M., **Howard, A.G.**, Popkin, B.M., Zhang, B., Du, S., Guilkey, D.K. "Accounting for Selectivity Bias and Correlation Across the Sequence From Elevated Blood Pressure to Hypertension Diagnosis and Treatment" *American Journal of Hypertension* 31(1):63-71 (2017).
33. Dong, F., **Howard, A.G.**, Herring, A.H., Adair, L.S., Thompson, A.L., Popkin, B.M., Aiello, A.E., Zhang, B., Gordon-Larsen, P. "Concordance of haemoglobin A1c, blood pressure and C-reactive protein between children and their parents in Chinese households." *Pediatric Obesity* 12(5):422-430 (2017).
34. Robinson, W.R., Cheng, M.M., **Howard, A.G.**, Carpenter, W.R., Brewster, W.R., Doll, K.M. "For U.S. Black women, shift of hysterectomy to outpatient settings may have lagged behind White women: a claims-based analysis, 2011-2013" *BMC Health Services Research* 17(1):526 (2017).
35. Holliday, K., **Howard, A.G.**, Emch, M., Rodriguez, D.A., Rosamond, W.D., Evenson, K.R. "Where Are Adults Active? An Examination of Physical Activity Locations Using GPS in Five US Cities." *Journal of Urban Health* 94(4):459-469 (2017).
36. Rubenstein, E., Edmondson Pretzel, R., Windham, G.C., Schieve, L.A., Wiggins, L.D., DiGuseppi, C., Olshan, A.F., **Howard, A.G.**, Pence, B.W., Young, L., Daniels, J. "The Broader Autism Phenotype in Mothers is Associated with Increased Discordance Between Maternal-Reported and Clinician-Observed Instruments that Measure Child Autism Spectrum Disorder" *Journal of Autism and Developmental Disorders* 47(10):3253-3266 (2017).
37. Dong, F., **Howard, A.G.**, Herring, A.H., Thompson, A.L., Adair, L.S., Popkin, B.M., Aiello, A.E., Zhang, B., Gordon-Larsen, P. "Longitudinal associations of away-from-home eating, snacking, screen time, and physical activity behaviors with cardiometabolic risk factors among Chinese children and their parents" *American Journal of Clinical Nutrition* 106(1):168-178 (2017).
38. Inoue, Y., **Howard, A.G.**, Thompson, A.L., Mendez, M.A., Herring, A.H., Gordon-Larsen, P. "The association between urbanization and reduced renal function: findings from the China Health and Nutrition Survey" *BMC Nephrology* 18(1):16 (2017).
39. Holliday, K., **Howard, A.G.**, Emch, M., Rodríguez, D.A., Evenson, K.R. "Are buffers around home representative of physical activity spaces among adults?" *Health and Place* 45:181-188 (2017).

40. Eudy, A.M., Siega-Riz, A.M., Engel, S.M., Franceschini, N., **Howard, A.G.**, Clowse, M.E., Petri M. "Gestational weight gain in women with systemic lupus erythematosus" *Lupus* 26(6):623-632 (2017).
41. Franceschini, N., Fry, R. Balakrishnan, P., Navas-Acien, A., Oliver-Williams, C., **Howard, A.G.**, Cole, S., Haack, K., Lange, E., Howard, B., Best, L., Francesconi, K., Goessler, W., Umans, J., Tellez-Plaza, M. "Cadmium body burden and increased blood pressure in middle-aged American Indians: the Strong Heart Study," *Journal of Human Hypertension* 31(3):225-230 (2017).
42. Holliday, K., **Howard, A.G.**, Emch, M., Rodriguez, D.A., Rosamond, W.D., Evenson, K.R. "Deriving a GPS Monitoring Time Recommendation for Physical Activity Studies of Adults" *Medicine & Science in Sports & Exercise* 49(5):939-947 (2016).
43. Evenson, K.R., Wen, F., **Howard, A.G.**, Herring, A.H. "Applying derived latent class assignments from NHANES 2003-2006 accelerometry data to external populations" *Data in Brief* 9:926-930 (2016).
44. Thyagarajan, B., **Howard, A.G.**, Durazo-Arvizu, R., Eckfeldt, J.H., Gellman, M.D., Kim, R.S., Liu, K., Mendez, A.J., Penedo, F.J., Talavera, G.A., Youngblood, M.E., Zhao, L., Sotres-Alvarez, D. "Analytical and biological variability in biomarker measurement in the Hispanic Community Health Study/Study of Latinos" *Clinica Chimica Acta* 463:129-137 (2016).
45. Li, Y., Wang, D.D., Ley, S.H., **Howard, A.G.**, He, Y., Lu, Y., Danaei, G., Hu, F.B. "Potential Impact of Time Trend of Life-Style Factors on Cardiovascular Disease Burden in China" *Journal of the American College of Cardiology* 68(8):818-833 (2016).
46. Dong, F., **Howard, A.G.**, Herring, A.H., Adair, L.S., Thompson, A.L., Popkin, B.M. Aiello, A.E., Zhang, B., Gordon-Larsen, P. "Concordance of hemoglobin A1c, blood pressure and C-reactive protein between children and their parents in Chinese households," *Pediatric Obesity* (2016).
47. Rummo, P.E., Hirsch, J.A., **Howard, A.G.**, Gordon-Larsen, P. "In Which Neighborhoods Are Older Adult Populations Expanding? Sociodemographic and Built Environment Characteristics Across Neighborhood Trajectory Classes of Older Adult Populations in Four U.S. Cities Over 30 Years" *Gerontology and Geriatric Medicine* (2016).
48. Fernández-Rhodes, L., Hodonsky, C.J., Graff, M, Love, S.M., **Howard, A.G.**, Seyerle, A.A., Avery, C.L., Chittoor, G., Franceschini, N., Voruganti, V.S., Young, K., O'Connell, J.R., North, K.E., Justice

- A.E. "Comparison of two models for gene-environment interactions: An example of simulated gene-medication interactions on systolic blood pressure" *BMC Proceedings* 10(Suppl 7):371-377 (2016).
49. Justice, A.E., ***Howard, A.G.**, Chittoor, G., Fernandez-Rhodes, L., Graff, M., Voruganti, V.S., Diao, G. Love, S.M., Franceschini, N., O'Connell, J.R., Avery, C.L., Young, K.L, North, K.E. "Genome-wide association of trajectories of systolic blood pressure change," *BMC Proceedings* 10(Suppl 7):321-327 (2016).
50. Richardson, A., Meyer, K.A., **Howard, A.G.**, Boone-Heinonen, J., Popkin, B.M., Evenson, K.R., Shikany, J.M., Lewis, C.E., Gordon-Larsen, P. "Multiple pathways from the neighborhood food environment to increased body mass index through dietary behaviors: a structural equation-based analysis in the CARDIA study" *Health and Place* 36:74-87 (2015).
51. Camacho, A., Gonzalez, P., Buelna, C., Emory, K.T., Talavera, G.A., Castaneda, S.F., Espinoza, R.A., **Howard, A.G.**, Perreira, K.M., Isasi, C.R., Daviglius, M.L., Roesch, S.C. "Anxious-Depression among Hispanic/Latinos from different backgrounds: Results from the Hispanic Community Health Study/Study of Latinos (HCHS/SOL)" *Social Psychiatry and Psychiatric Epidemiology* 50(11):1669-77 (2015).
52. Attard, S., Herring, A., Wang, H., **Howard, A.G.**, Thompson, A., Adair, L., Mayer-Davis, E., Gordon-Larsen, P. "Implications of iron deficiency/anemia on the classification of diabetes using HbA1c" *Nutrition and Diabetes* 5:e166 (2015).
53. Attard, S., **Howard, A.G.**, Herring, A.H., Zhang, B., Du, S., Aiello, A.E., Popkin, B.M., Gordon-Larsen, P. "Differential associations of urbanicity and income with physical activity in adults in urbanizing China: findings from the population-based China Health and Nutrition Survey 1991-2009" *International Journal of Behavioral Nutrition and Physical Activity* 12:152 (2015).
54. Rummo, P.E., Meyer, K.A., **Howard, A.G.**, Shikany, J.M., Guilkey D.K., Gordon-Larsen, P. "Fast food price, diet behavior, and cardiometabolic health: Differential associations by neighborhood SES and neighborhood fast food restaurant availability in the CARDIA study." *Health & Place* 35:128-35 (2015).
55. Dong, F., **Howard, A.G.**, Herring, A., Popkin, B.M., Gordon-Larsen, P. "White Rice Intake Varies in Its Association with Metabolic Markers of Diabetes and Dyslipidemia Across Region among Chinese Adults" *Annals of Nutrition and Metabolism* 66(4): 209-218 (2015).

56. Boone-Heinonen, J., **Howard, A.G.**, Meyer, K., Lewis, C.E., Kiefe, C.I., Laroche, H.H., Gunderson, E.P., Gordon-Larsen, P. "Marriage and parenthood in relation to obesogenic neighborhood trajectories: The CARDIA Study." *Health & Place* 34:229-40 (2015).
57. Paynter, L., Koehler, E., **Howard, A.G.**, Herring, A.H., Gordon-Larsen, P. "Characterizing Long-Term Patterns of Weight Change in China using Latent Class Trajectory Modeling," *PLOS ONE* 10(2) (2015).
58. Meschia, J.F., Voeks, J.H., Leimgruber, P.P., Mantese, V.A., Timaran, C.H., Chiu, D., Demaerschalk, B.M., Howard, V.J., Hughes, S.E., Longbottom, M., **Howard, A.G.**, Brott, T.G. "Management of Vascular Risk Factors in the Carotid Revascularization Endarterectomy versus Stenting Trial (CREST)." *Journal of the American Heart Association* 3(6) (2014).
59. Richardson, A., Meyer, K.A., **Howard, A.G.**, Keife, C.I., Lewis, C.E., Gordon-Larsen, P. "Neighborhood socioeconomic status and food environment: a 20-year longitudinal latent class analysis among CARDIA participants," *Health & Place* 29(30C):145-153. (2014).
60. Gordon-Larsen, P., Koehler, E., **Howard, A.G.**, Paynter, L., Thompson, A. L., Adair, L., Mayer-Davis, E.J., Zhang, B., Popkin, B.M., Herring, A.H. "Eighteen-year weight trajectories and metabolic markers of diabetes in modernizing China," *Diabetologia* 57(9):1820-1829 (2014).
61. Sorlie, P.D., Allison, M.A., Aviles-Santa, L., Cai, J., Daviglius, M.L., **Howard, A.G.**, Kaplan, R., LaVange, L.M., Raij, L., Schneiderman, N., Wassertheil-Smoller, S., Talavera, G.A. "Prevalence of hypertension, awareness, treatment and control in the Hispanic Community Health Study/Study of Latinos," *American Journal of Hypertension* 27(6):793-800 (2014).
62. Ng, S.W., **Howard, A.G.**, Wang, H., Su, C., Zhang, B. "The Physical Activity Transition among Adults in China: 1991-2011," *Obesity Reviews* 15(Suppl. 1):27-36 (2014).
63. Attard, S.M., Herring, A.H., **Howard, A.G.**, Gordon-Larsen, P. "Longitudinal trajectories of BMI and cardiovascular disease risk: The National Longitudinal Study of Adolescent Health," *Obesity* 21:2180-2188 (2013).
64. Barzilay, J.I., **Howard, A.G.**, Evans, G.W., Fleg, J.L., Cohen, R.M., Booth, G.L., Kimel, A.R., Pedley C.F., Cushman, W.C. "Intensive Blood Pressure Treatment Does Not Improve Cardiovascular

Outcomes in Centrally Obese Hypertensive Individuals With Diabetes,” *Diabetes Care* 35:7:1401-1405 (2012).

65. Matijevic, N., Wu, K.K., **Howard, A.G.**, Wasserman, B., Wang, W.Y.-W., Folsom, A.R., Sharrett, A.R. “Association of Blood Monocyte and Platelet Markers with Carotid Artery Characteristics: The Atherosclerosis Risk in Communities Carotid MRI Study,” *Cerebrovascular Diseases* 31:552-558 (2011).

SCIENTIFIC PRESENTATIONS

”Association Between Urbanization-related Change in Diet, the Gut Microbiota and Microbiome-related Metabolites in a Rapidly Urbanizing Environment in China” American Heart Association EPI/Lifestyle 2020 Scientific Sessions, Phoenix, AZ. Poster Presentation - March 2020.

“Missing Data: pitfalls and priorities,” Population Health Research Institute, Hamilton, ON. Seminar - February 2018.

“Integrating biology, behavior, and environment to study complex pathways from urbanization to health,” Carolina Population Center, Chapel Hill, NC. Seminar - January 2018.

“A Brief Introduction to Structural Equation Modeling,” Thurston Arthritis Research Center, Chapel Hill, NC. Seminar - November 2017

“Introduction to Structural Equation Modeling,” The North Carolina Translationonal & Clinical Sciences (NC TraCS) Biostatistics Seminar Series, Chapel Hill, NC. Seminar - October 2017

“Cleaning up after missing data: pitfalls and priorities”, Carolina Population Center, Chapel Hill, NC. Seminar - November 2015

“The role of rapid lifestyle trajectories across 18 years in modernizing China in the pathway to BMI” **Howard, A.G.**, Herring, A., Popkin, B., Du, S., Zhang, B., Gordon-Larsen, P. The Obesity Society Annual Meetings, Los Angeles, CA. Poster Presentation - November 2015

“Missing data methods for health services research”NRSA Training Program in Health Services Research, Chapel Hill, NC. Seminar - October 2015

“How the choice of time scale can impact latent class trajectory analysis” **Howard, A.G.**, Herring, A., Gordon-Larsen, P. Joint Statistical Meetings, Seattle, WA. Contributed Talk - August 2015

“The Use of Friedman’s Test in the Case of Informatively Missing Data” **Howard, A.G.**, Koch G.G., Bangdiwala, S.I. Joint Statistical Meetings, Boston, MA. Contributed Talk - August 2014

“The Role of Physical Activity in the Hypertension Pathway: A longitudinal pathway-based analysis across 18 years in modernizing China” **Howard, A.G.**, Herring, A.H., Popkin, B., Du, S.F., Gordon-Larsen, P. Epidemiology and Prevention/Nutrition, Physical Activity and Metabolism 2014 Scientific Sessions, San Francisco, CA Contributed Talk - March 2014

“Missing Data and Multiple Imputation” Obesity Journal Club, UNC-Chapel Hill, Chapel Hill, NC. Moderator - June 2013

“Action to Control Cardiovascular Risk in Diabetes (ACCORD) Home Blood Pressure Study Results” **Howard, A.G.**, Cushman, W.C., Garaci, T., Kirpach, B., Grimm, R., Cutler, J., Senior, P., deQuattro, D.L., Margolis, K., Basile, J., Evans, G.W. for the ACCORD Study Group Society for Clinical Trials Meeting, Montreal, Canada. Poster Presentation - May 2011.

“Methods of Analyzing Missing Data in Small Sample Studies” **Howard, A.G.**, Bangdiwala, S.I. North Carolina Symposium for Women in Mathematics and Statistics, Raleigh, NC. Contributed Talk - April 2011

“Choosing a Mathematics Graduate Program” Nebraska Conference for Undergraduate Women in Mathematics, Lincoln, NE. Invited Talk - January 2009

ONGOING
RESEARCH
SUPPORT

Exome Variants Underlying Weight Gain from Adolescence to Adulthood - R01HD057194 (Gordon-Larsen) - Role: Co-Investigator

Characterizing pleiotropy in cardiometabolic phenotypes among diverse populations - R01HL142825-01 (Avery) - Role: Co-Investigator

Leveraging Multi-Omics Approaches To Examine Metabolic Challenges Of Obesity In Relation To Cardiovascular Diseases - R01HL143885-01 (Gordon-Larsen, Avery, North, Sumner) - Role: Co-Investigator

Transition to a Western Diet and Cardiometabolic Risk: Biomarkers Derived from the Microbiome - R01DK104371-01A1 (Gordon-Larsen) - Role: Co-Investigator

Monitoring Social Change: Dynamics Of Aging And Cognitive Function - R01-AG065357 (Popkin) - Role: Co-Investigator

Monitoring Social Change: Health and Human Capital from Childhood to Adulthood - R01-HD030880-25 (Popkin, Gordon-Larsen) - Role: Co-Investigator

Physical Activity, Sedentary Behavior, and Cancer Incidence in Women - R01-CA227122 (Evenson) - Role: Co-Investigator

Racial Differences in Treatment with Hysterectomy: A multi-level investigation - R01MD011680-01 (Robinson) - Role: Co-Investigator

COMPLETED
RESEARCH
SUPPORT

Peers for Progress – “Diabetes Management through Peer Support and Community Outreach from the Patient-Centered Medical Home” - Bristol Myers Squibb Foundation (Fisher) - Role: Statistician

Emergence of Cardiometabolic Risk Across the Lifecycle in China - R01HL108427 (Gordon-Larsen) - Role: Co-Investigator

Environmental Health Sciences Training Grant Recipient, National Institutes of Health, 2009-2011

Cardiovascular Health Research Training Grant Recipient, National Institutes of Health, 2005-2007

SERVICE TO
THE
PROFESSION

Editorial Responsibilities

Editorial Board for Journal of Adolescent Health - 2020 - Present

Reviewer for *Health & Place, Environmental Health Perspectives, PLOS ONE, Circulation, BMC Public Health, American Journal of Preventive Medicine, Cardiovascular Diabetology, Depression and Anxiety, The American Journal of Clinical Nutrition, Journal of the American Heart Association, International Journal of Obesity, International Journal of Environmental Research and Public Health*

SERVICE TO
UNC: CHAPEL
HILL

Inclusive Excellence Council Biostatistics Representative 2021-present

SERVICE TO
UNC
DEPARTMENT
OF
BIostatISTICS

Undergraduate Admissions Committee Member, 2013-present

Graduate Admissions Committee Member, 2017-present

Alumni and Social Committee Member, 2016-2021

Alumni and Social Committee Chair, 2019-2021

Global Public Health Committee Member, 2013-2017

COURSES
TAUGHT

School of Nursing - Fall 2015
UNC-Chapel Hill, Chapel Hill, NC

Guest Lecturer - *Nursing 778 - Interpreting Research Results*

Department of Biostatistics - Fall 2013
UNC-Chapel Hill, Chapel Hill, NC

Biostatistics 700 - Research Skills In Biostatistics, 5 Students

Division of Public Health Sciences - Spring 2011
Wake Forest University School of Medicine, Winston-Salem, NC

Clinical and Population Translational Science (CPTS) 732 - Applied Linear Models, 15 Students

Kasetsart University, Bangkok, Thailand - Summer 2009

Longitudinal Data Analysis Mini-Course