

Christy L. Avery, Ph.D., MPH, FAHA

ADDRESS

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EDUCATION

2007

Doctor of Philosophy
Epidemiology, formal minor in biostatistics
University of North Carolina at Chapel Hill
Dissertation: Genotype-by-smoking interaction and the risk of
atherosclerosis and its clinical sequelae
Advisor: Dr. Kari North

2003

Masters of Public Health
Epidemiology, specialization in public health genetics
University of Michigan, Ann Arbor

1999

Bachelor of Science
Human Biology
Michigan State University

PROFESSIONAL EXPERIENCE

2017 - present

Associate Professor of Epidemiology
University of North Carolina at Chapel Hill

2016 – present

Carolina Population Center Fellow
University of North Carolina at Chapel Hill

2011 - 2017

Assistant Professor of Epidemiology
University of North Carolina at Chapel Hill

2007 – 2011

Postdoctoral Fellow
Department of Epidemiology
University of North Carolina at Chapel Hill

2003 – 2007

Research Assistant
Department of Epidemiology
University of North Carolina at Chapel Hill

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2001 – 2003 Research Assistant
Department of Epidemiology
University of Michigan, Ann Arbor

2000 – 2001 Research Assistant
Department of Pharmacology
University of Michigan, Ann Arbor

HONORS

2016 Invited attendee, AHA/ASA Research Leaders Academy
2015 Sandra A. Daugherty AHA Epidemiology/Lifestyle junior faculty award
2013 CHARGE visiting fellow (Mentor: Dr. Bruce Psaty, University of Washington)
2011 -2017 NIH / NHLBI Clinical Research Loan Repayment Program Award
2010 University of North Carolina Postdoctoral Award for Research Excellence
2008 Delta Omega, Honorary Society for Graduate Studies in Public Health
2007 - 2009 University of North Carolina Cardiovascular Disease postdoctoral training grant
2006 Rebecca James Baker Memorial Scholarship
2005 North Carolina State University Institute in Statistical Genetics scholarship
2003 - 2006 University of North Carolina Cardiovascular Disease predoctoral training grant
2001 - 2003 University of Michigan Dean’s Scholarship
1996 - 1999 Dean's List of Scholars, Michigan State University

EXTRAMURAL FUNDING

Current Research Support

Project #R01HL143885 Avery, Gordon-Larsen, North, Sumner (MPI) 04/01/2019-03/31/2023
Title: Leveraging multi-omics approaches to examine metabolic challenges of obesity in relation to cardiovascular diseases
Description: This study will test molecular mechanisms underlying obesity-associated CVD
Role: Principal Investigator (with Penny Gordon-Larsen, Kari North, and Susan Sumner)
Total costs: \$ 8,894,348

Project #R01HL142825 Avery NHLBI 02/10/2019-01/31/2024
Title: Characterizing pleiotropy in cardiometabolic phenotypes among diverse populations
Description: This study will examine the role of shared genetic effects in the etiology of cardiometabolic traits that span blood pressure, glucose, obesity, electrocardiographic, and lipid measurements.
Role: Principal Investigator
Total costs: \$3,231,039

Project #2011561720 Avery Amgen 02/01/2019-08/31/2020
Title: Phenome-wide association study of Lp(a) variants
Description: This study will assess the wide-ranging phenotypic consequences of genetically inferred Lp(a)
Role: Principal investigator

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Total costs: \$308,468

Project #R01HG010297 Matise, Gignoux (MPI) NHGRI 06/01/2019-05/31/2023

Title: PAGE III: Population Architecture using Genomics and Epidemiology

Description: This grant will test molecular mechanisms underlying established obesity genetic variants using metabolic markers via metabolomics.

Role: Co-investigator

Total costs: \$6,800,000

Project #R03HD097630 Avery, Harris (MPI) NICHD 09/20/2018-08/31/20

Title: Add Health GWAS Data: User Support and Research Tools Enable Widespread Access

Description: The study outlines a plan to develop tools to enable widespread access to and use of genome-wide association study (GWAS) data among respondents in the National Longitudinal Study of Adolescent to Adult Health (Add Health).

Role: Principal Investigator (with Kathleen Mullan Harris)

Total cost: \$155,500

Project #U01HG007416 North (PI) NHGRI 07/01/13- 05/31/19

Title: Genetic epidemiology of causal variants across the life course (CALiCo) Phase II

Description: The Genetic Epidemiology of Causal Variants Across the Life Course (CALiCo) is a member study of Population Architecture using Genomics and Epidemiology (PAGE). PAGE was established to investigate the epidemiologic architecture of mature genetic variants associated with complex diseases.

Role: Co-investigator

Total costs: \$3,057,956

Project #T32HL129982 Mohlke, North (MPD) NHLBI 05/01/16 – 05/30/21

Title: The Genetic Epidemiology of Heart, Lung, and Blood Traits Training Grant (GenHLB)

Description: Training grant in heart, lung, and blood genetic epidemiology for pre- and post-doctoral fellows in the University of North Carolina's Department of Epidemiology.

Role: HLB Genetic Epidemiology training dimension lead

Total costs: \$1,207,760

Pending Research Support

Project # R01HL147853 Avery NHLBI 09/01/2019-08/31/2024

Title: Inflammatory mediators of cardiometabolic risk in Latinos

Description: This grant will measure eicosanoid metabolites in HCHS/SOL participants and examine their association with diabetes and cardiometabolic risk factors.

Role: Principal investigator

Total costs: \$3,875,000

Completed Research Support

Project # R01HD73342 Harris (PI) NICHD 07/01/12-03/01/19

Title: Add Health: A Genotype and Phenotype Resource for the Global Scientific Community

Description: This proposal will complete genome-wide genotyping on the remaining 6,000 Add Health samples using current Illumina chip technology, prepare genotype and phenotype data and

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documentation for dissemination, and conduct GWAS

Role: Co-Investigator

Total costs: \$2,864,536

Project # R01HL103612 Psaty (PI) NHLBI 08/10/11-07/31/17 (NCE)

Title: Prospective meta-analyses of drug-gene interactions: CHARGE GWAS consortium

Description: The investigators will use GWAS methods to identify potential drug-gene interactions related to unintended drug effects and to identify genetic variants that may modify the intended effects of treatments for lipids and blood pressure on change in risk factor levels, carotid atherosclerosis and incidence of cardiovascular events.

Role: Co-Investigator

Total costs: \$439,755

Project # 15GPSPG239 Avery (PI) AHA 02/1/2015- 01/31/2017

Title: Pharmacogenomics of risk factors for cardiac arrhythmias in global populations

Description: This study will evaluate common SNPs influencing arrhythmogenic adverse drug reactions in European American, African American, and Hispanics/Latino populations.

Role: Principal Investigator

Direct costs: \$500,000

Project # R21HL121580 Avery (PI) NHLBI 09/15/13- 07/31/16 (NCE)

Title: The natural history of cardiovascular health in U.S. populations

Description: This study will characterize the stages and age epochs at which African American, Hispanic/Latino, American Indian, and Caucasian U.S. populations transition between ideal, intermediate, and poor levels of cardiovascular health metrics.

Role: Principal Investigator

Total costs: \$210,486

Project #PPHF 2014 Hoerger (PI) CDC 10/01/2014-09/30/16

Title: Developing Online Toolkits to Evaluate Diabetes Burdens and Impacts of Diabetes Preventions for States

Description: This project will compute and report diabetes-attributable morbidity, mortality, and economic costs as well as health and economic impacts of diabetes prevention programs for use by U.S. states

Role: Consultant

Project # R00HL098458 Avery (PI) NHLBI 08/15/11-05/31/15

Title: Enumerating the community burden of heart failure

Description: This study is designed to facilitate enumeration of heart failure in outpatient settings, accomplished by developing and calibrating simple but accurate heart failure classification tools in outpatient settings and applying these tools in the Atherosclerosis Risk in Communities Study.

Role: Principal Investigator

Total costs: \$450000

Project # R01ES017794 Whitsel (PI) NIEHS 08/11/10-05/30/15

Title: Modification of PM-mediated arrhythmogenesis in populations

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Description: This application will investigate susceptibility to the arrhythmogenic effects of particulate matter (PM) air pollution contributed by common genetic variation in the Women's Health Initiative Clinical Trial and Atherosclerosis Risk in Communities studies.

Role: Co-investigator

Total costs: \$2,289,037

Project # A10-0347-001 North (PI) NHLBI 08/01/2009-06/01/2011

Title: GWAS Analysis for the Women's Health Initiative Study

Description: The goal of this study is to detect, map, and identify polymorphic genes that influence variation in complex phenotypes in women.

Role: Co-investigator

Total costs: \$708,762

Project: # U01HG004803 North (PI) NHGRI 06/01/11-05/31/14

Title: Genetic epidemiology of causal variants across the life course (CALiCo)

Description: The Genetic Epidemiology of Causal Variants Across the Life Course (CALiCo) is a member study of Population Architecture using Genomics and Epidemiology (PAGE). PAGE was established to investigate the epidemiologic architecture of mature genetic variants associated with complex diseases.

Role: Co-investigator

Total costs: \$3,275,184

Project: # AS405 Avery (PI) WHI SE-RC RFA 11/01/12-9/30/13

Title: Pharmacogenomics of risk factors for cardiac arrhythmias in global populations

Description: Pilot study to include Women's Health Initiative Clinical Trial participants in a ten-study consortium examining pharmacogenomic influences on ECG traits.

Role: Principal Investigator

Total costs: \$20,000

Project # K99HL098458 Avery (PI) NHLBI 04/01/10-08/14/11

Title: Enumerating the community burden of heart failure

Description: This study is designed to facilitate enumeration of heart failure in outpatient settings, accomplished by developing and calibrating simple but accurate classification tools in outpatient settings and applying these tools in the Atherosclerosis Risk in Communities Study cohort.

Role: Principal Investigator

Total costs: \$200,000

Project # 0615310U Avery (PI) AHA 07/01/06-08/30/07

Title: Tobacco exposure, DNA repair genes, and atherosclerosis: the Atherosclerosis Risk in Communities (ARIC) study

Description: This project evaluated how common DNA repair gene variants, in combination with exposure to tobacco smoke, modified the risk of atherosclerosis and its clinical sequelae.

Role: Principal Investigator

Total costs: \$25,950

PUBLICATIONS

May, 2019

[†]First author is a pre- or post-doctoral fellow for whom I am the primary mentor.

*Co-first/senior authorship

UNDER REVIEW

10. Aburto TC, Gordon-Larsen P, Poti JM, Howard AG, Adair LS, **Avery CL**, Popkin BM. 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. Under revision, *J Am Heart Assoc*.

[†]9. Baldassari AR, Sitlani CM, Highland HM, Arking DE, Buyske S, Darbar D, Gondalia R, Graff M, Guo X, Heckbert SR, Hindorff LA, Hodonsky CJ, Chen Y-DI, Kaplan RC, Peters U, Post W, Reiner AP, Rotter JI, Shohet RV, Sotoodehnia N, Tao R, Taylor KD, Yao J, Kenny EE, Lin HJ, Zoliman EZ, Whitsel EA, North KE, Kooperberg C, **Avery CL**. Multi-ethnic genome-wide association study of decomposed cardiac conduction phenotypes illustrates strategies to identify and characterize evidence of shared genetic effects for complex traits. Under review, *PLoS Genetics*.

8. Irvin MR, Sitlani CS, Bis JA, Whitsel EA, Steward J, Raffield L, Sun F, Liu C-T, Xu H, Cupples AL, Rossing P, Smith A, Nogueira NRZ, Norrdam R, Rotter J, Yao J, Li X, Guo X, Limdi N, Lange L, Ahluwalia TS, Arnett DK, **Avery CL**. Genome wide association study of apparent treatment resistant hypertension in the CHARGE consortium: The CHARGE Pharmacogenetics Working Group. Under review, *Pharmacogenomics*.

7. Kats D, Evenson KR, Zeng D, **Avery CL**, Palta P, Kritchevsky SB, Heiss G. Physical activity from mid- to late-life: duration and intensity. The ARIC Study. Under review, *The Journals of Gerontology, Series A*, 12/2018.

[†]6. Engeda JC, Lhachimi SK, Rosamond WD, Lund JL, Keyserling TC, Safford MM, Colantonio LD, Muntner P, **Avery CL**. Projections of atherosclerosis cardiovascular disease and type 2 diabetes across statin treatment guidelines. Under review, 05/2019.

5. de las Fuentes L, Sung YJ, Sitlani CM, **Avery CL**, Bartz TM, de Keyser C, Evans DS, Li X, Musani SK, Ruitter R, Smith AV, Sun F, Trompet S, Arnett DK, Bis JC, Broeckel U, Busch EL, Chen YI, Correa A, Cummings SR, Floyd JS, Ford I, Guo X, Harris TB, Ikram MA, Lange L, Launer LJ, Reiner AP, Schwander K, Smith NL, Sotoodehnia N, Stewart JD, Stott DJ, Sturmer T, Taylor KD, Uitterlinden A, Vasani RS, Wiggins KL, Cupples LA, Gudnason V, Heckbert SR, Jukema JW, Liu Y, Psaty BM, Rao DC, Rotter JI, Stricker B, Wilson JG, Whitsel EA. Genome-wide meta-analysis of variant-by-diuretic interactions as modulators of lipid traits in persons of European and African ancestry. Under revision, *Pharmacogenomics*. 06/2017

4. Swenson BR, Louie T, Lin HH, Mendez-Giraldez R, Below JE, Laurie CC, Kerr KF, Highland HM, Ryckman K, Kooperberg C, Soliman EZ, Seyerle AA, Guo X, Taylor KD, Yao J, Heckbert SR, Petty LE, Cheng S, Below N, Whitsel EA, Hanis CL, Rotter JI, Sofer T, **Avery CL**, Sotoodehnia N. GWAS of QRS Duration Identifies New Loci Specific to Hispanic/Latino Populations. Under review, *Plos One*. 06/2018

3. Jarmul J, Pletcher M, Couper D, Hassmiller Lich K, Pignone M, Weinberger M, Wheeler SB, Morrison A, de Vries P, **Avery CL**. Association between a 27-SNP cardiovascular genetic risk score and atherosclerotic cardiovascular disease outcomes over 22 years in a diverse, population-

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based cohort: The Atherosclerosis Risk in Communities (ARIC) study. Submitted to *J Am Heart Assoc* 11/2016.

2. Bauer AE, **Avery CL**, Shi M, Weinberg C, Olshan AF, Harmon Q, Luo J, Yang J, Manuck T, Williams N, McGinnis R, Morgan L, Klungsøyr K, Trogstad L, Magnus P, Engel SM. A mother-child dyad analysis of carbon monoxide and nitric oxide signaling genes and preeclampsia. Submitted to *Paediatr Perinat Epidemiol*, 01/2017.

†1. Seyerle AA, Sitlani CM, North KE, Lee CT, Whitsel EA, Stürmer T, **Avery CL**. Effect of Bias and Misclassification on Gene-Environment Studies Conducted in Observational Cohort Settings: A Simulation Study. Submitted to *Human Mol Genet*, 02/2018.

PUBLISHED OR IN-PRESS (n= 1,865 citations, h-index = 23)

†82. Engeda JC, Stackhouse A, White M, Rosamond WD, Lhachimi SK, Lund JL, Keyserling TC, **Avery CL**. Narrowing the focus to primary prevention populations by broadening the view: Examining the association between statins and diabetes among randomized controlled trials and observational studies. In press, *Diabetes Research and Clinical Practice*. 2019

81. Wojcik GL, Graff M, Nishimura K, Tao R, Haessler J, Gignoux CR, Highland HM, Patel YM, Sorokin EP, **Avery CL**, Belbin GM, Bien SB, Cheng I, Hodonsky CJ, Huckins LM, Jeffs J, Justice AE, Kocarnik JM, Lin BM, Lu Y, Nelson SC, Park S-S L, Preuss M, Richard MA, Schurmann C, Setiawan VW, Vishnu A, Verbanck M, Walker R, Young KL, Zubair N, AMbite JL, Boerwinkle E, Bottinger E, Bustamante CD, Caberto C, Conomos MP, Deelman E, Do R, Doheny K, Fernandez-Rhodes L, Fornage M, Heiss G, Hindorff L, Jackson RD, James R, Laurie CA, Laurie CC, Li Y, Lin DY, Nadkarni G, Pankow J, Pooler LC, Reiner AP, Romm J, Sabati C, Sheng X, Stahl E, Stram D, Thornton TA, Wassel CL, Wilkens LR, Yoneyama S, Buyske S, Haiman C, Kooperberg C, Le Marchand L, Loos RJF, Matisse TC, North KE, Peters U, Kenny EE, Carlson CS. Genetic diversity turns a new PAGE in our understanding of complex traits. In press, *Nature*, 2019

80. Martinez-Miller EE, Prather A, Robinson WR, **Avery CL**, Yang YC, Haan MN, Aiello AE. US acculturation and poor sleep among an intergenerational cohort of adult Latinos in Sacramento, California. In press, *Sleep*. 2018

79. Kocarnik JM, Richard M, Graff M, Haessler J, Carlson C, Carty CL, Reiner AP, **Avery CL**, Ballantyne CM, LaCroix AZ, Assimes TL, Barbalić M, Pankratz N, Tang W, Chen D, Pereira R, Bien S, Nishimura K, Best LG, Ambite JL, Cheng I, Crawford D, Hindorff LA, Heiss G, North KE, Haiman CA, Peters U, Le Marchand , Kooperberg C. Discovery, fine-mapping, and conditional analyses of genetic variants associated with C-reactive protein in multiethnic populations using the MetaboChip in the Population Architecture using Genomics and Epidemiology (PAGE) study. In press, *Hum Mol Genet*. 2018

†78. Hodonsky CJ, Schurman C, Schick UM, Kocarnik J, Tao R, van Rooij FJA, Wassel C, Buyske S, Fornage M, Hindorff LA, Psaty BM, Ganesh SK, Lin DY, North KE, Kooperberg CL, Reiner AP, Loos R, **Avery CL**. Generalization and fine mapping of RBC trait genetic associations to multi-ethnic populations: The PAGE Study. In press, *Am J Hematology*. 2018

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77. van Setten J, Brody J, Campbell H, Del Greco F, Evans DS, Givson Q, Gudbjartsson DF, Kerr FK, Krijthe BP, Muller C, Muller-Nyrasyid M, Nolte IM, Padmanabhan S, Robino A, Smith AV, Sterj M, Swenson B, Tanaka T, Teumer A, Trompet S, Ulivi S, Verweji N, Yin X, Arnar DO, Asselbergs FW, **Avery CL**, Bis J, Butler AM, Blankenberg S, Boerwinkle E, Buckley BM, den Hoed M, Dominczak AF, Ehret GB, Eijgelsheim M, Felix SB, Franco OH, Gharib S, Harris TB, Heckbert S, Holm H, Ilaria G, Lorio A, Kolcic I, Kors JA, Lakatta EG, Launer LJ, Lin HJ, Lin H, Liu Y, Loos R, MacFarlane P, Magnani JW, Mateo I, Meitinger T, Mitchell B, Munzel T, Papanicolaou GJ, Peters A, Pfeufer A, Pramstaller PM, Rotter JI, Rudan I, Samani NJ, Schlessinger D, Aldana CTS, Sinner M, Snieder H, Soliman E, Spector TD, Stott DJ, Strauch K, Tarasov K, Uitterlinden AG, Volker U, Volzke H, Waldenberger M, Wild PS, Zeller T, Alonso A, Bandinelli S, Benjamin EJ, Cucca F, Cummings SR, Dorr M, Ferrucci L, Gasparini P, Gudnason V, Hayward C, Heckbert SR, Hicks AA, Jamshidi Y, Jukema JW, Kaab S, Munroe PB, Parsa A, Polasek O, Psaty BM, Schnabel RB, Sinagra G, Stefansson K, Stricker BH, van der Harst P, van Duijn C, Wilson JF, de Bakker PIW, Isaacs A, Arking DA, Sotoodehnia N. Genome-wide association meta-analysis of PR interval identifies 47 novel loci associated with atrial and atrioventricular electrical activity. In press, *Nat Commun*, 2018.

76. Jarmul J, Pletcher MJ, Hassmiller Lich K, Wheeler SB, Weinberger M, **Avery CL**, Jonas DE, Earnshaw S, Pignone M. Cardiovascular Genetic Risk Testing for Targeting Statin Therapy in the Primary Prevention of Atherosclerotic Cardiovascular Disease: A Cost-Effectiveness Analysis.. Interpreting a 27-SNP cardiovascular genetic risk score in combination with traditional cardiovascular risk factors for prediction of atherosclerotic cardiovascular disease. *Circ Cardiovasc Qual Outcomes*; Apr;11(4): e00417

75. Hardy ST, **Avery CL**, Zeng D, Heiss G. Primary Prevention of Chronic Kidney Disease Through Population-Based Strategies for Blood Pressure Control: The ARIC Study. In press, *The Journal of Clinical Hypertension*. 2018

74. Napier MD, Franceschini N, Gondalia R, **Avery CL**, Stewart JD, Mendez-Giraldez R, Sitlani CM, Seyerle AA, Highland HM, Li Y, Wilhelmsen KC, Yan S, Duan Q, Roach J, North KE, Reiner AP, Zhang Z-M, Tinker LF, Liao D, Laurie C, Gogarten SM, Lin HJ, Brody JA, Sotoodehnia N, Whitsel EA. A trans-ethnic meta-analysis and genome-wide association study of ventricular and supraventricular ectopy. *Sci Rep*, 2018 Apr. 8(1): 5675

73. Irvin MR, Sitlani CM, Noordam R, **Avery CL**, Bis JC, Floyd JS, Hofman A, Li J, Limdi NA, Srinivasasainagendra V, Stewart J, Li J, Wilson JG, Lipovich L, Smith A, Bartz TM, Hofman A, Whitsel EA, Uitterlinden AG, Wiggins KL, Wilson JG, Zhi D, Stricker BH, Arnett DK, Psaty BM, Lange LA. Genome-wide meta-analysis of SNP-by-thiazide diuretic and SNP-by-ACEI/ARB effect on serum potassium in cohorts of European and African ancestry in CHARGE. In press, *Pharmacogenomics*. 2018

†72. Engeda JC, Holliday KM, Hardy ST, Chakladar S, Zeng D, Lin DY, Howard BV, Daviglius ML, Schreiner PJ, **Avery CL**. Why metrics matter: how distinct cholesterol metrics could alter prevention efforts. *Sci Rep*, 2018 Apr. 8(1): 6238

71. Busch EL, Don PK, Chu H, Richardson DB, Keku TO, Eberhard DA, **Avery CL**, Sandler RS.

May, 2019

Diagnostic accuracy and prediction increment of markers of epithelial-mesenchymal transition to assess cancer cell detachment from primary tumors. *BMC Cancer*, 2018 Jan. 18(1): 82.

†70. Méndez-Giráldez R, Gogarten SM, Below JE, Yao J, Seyerle AA, Kooperberg C, Soliman EZ, Rotter JI, Kerr KF, Rickman K, Taylor KD, Petty LE, Conomos MP, Sotoodehnia N, Cheng S, Highland HM, Heckbert SR, Sofer T, Guo X, Whitsel EA, Lin HH, Hanis CL, Laurie CC, **Avery CL**. GWAS of QT interval in Hispanics/Latinos generalizes previously identified loci and identifies population-specific signals. *Sci Rep*, 2017 Dec. 7(1): 17075

†69. Seyerle AA, Lin HJ, Gogarten SM, Stilp A, Mendez-Giraldez R, Soliman EZ, Baldassari A, Graff M, Heckbert SR, Kerr KF, Kooperberg C, Rodriguez CJ, Guo X, Ryckman KK, Yao J, Sotoodehnia N, Taylor KD, Whitsel EA, Rotter JI, Laurie CC, **Avery CL**. Genome-Wide Association Study of PR Interval in Hispanic/Latinos Identifies Novel Locus at *ID2*. *Heart*, 2018 Jun. 104(11):904-911.

68. Bauer AE, **Avery CL**, Shi M, Weinberg CR, Olshan AF, Harmon QE, Luo J, Yang J, Manuck T, Wu MC, Klungsoyr K, Trogstad L, Magnus P, Engel SM. Investigation of the inverse smoking-preeclampsia relationship through the exploration of gene by smoking interactions. In press, *Paediatr Perinat Epidemiol*, 2018 Jan. 32(1): 1-12.

67. Akinkugbe AA, **Avery CL**, Barritt AS, Cole SR, Lerch M, Mayerle J, Offenbacher S, Petersmann A, Nauck M, Völzke H, Slade GD, Heiss G, Kocher T, Holtfreter B. Do genetic markers of inflammation modify the relationship between periodontitis and nonalcoholic fatty liver disease? Findings from the SHIP study. *J Dent Res*, 2017 Nov. 96(12):1392-1399.

66. Kent ST, Rosenson RS, **Avery CL**, Correa A, Cummings SR, Cupples LA, Cushman M, Evans DS, Gudnason V, Harris TB, Howard G, Irvin MR, Judd SE, Jukema JW, Lange L, Levitan EB, Li X, Liu Y, Postmus I, Psaty MB, Rotter JI, Safford MM, Sitlani CM, Smith AV, Steward JD, Trompet S, Sun F, Vasan RS, Woolley JM, Whitsel EA, Wiggins KL, Wilson JG, Munter P. *PCSK9* loss-of-function mutations, low-density lipoprotein cholesterol, and coronary heart disease and stroke risk: data from nine population-based cohorts of African Americans and whites. *Circ Cardiovasc Genet*, 2017 Aug. 10(4): e001632.

65. Kerr KF, **Avery CL**, Lin HJ, Raffield LM, Zhang Q, Gogarten S, Jain D, Sofer T, Laurie CC, Mendez-Giraldez R, Kooperberg C, Hohensee C, Li Y, Perez M, Yao J, Guo X, Taylor KD, Lange LA, Rotter JI, Heckbert SR, Sotoodehnia N, Wilson JG, Whitsel EA. Genome-wide Association Study of Heart Rate and Its Variability in Hispanic/Latino Cohorts. *Heart Rhythm*, 2017 Nov. 14(11): 1675-1684.

64. Christophersen IE, Magnani JW, Yin X, Arking D, Niemeijer MN, Lubitz SA, **Avery CL**, Duan Q, Felix SB, Bis J, Kerr K, Isaacs A, Muller-Nurysid M, Muller C, North KE, Reiner AP, Tinker LF, Kors JA, Teumer A, Petersmann A, Sinner MF, Waldenberger M, Peters A, Meitinger T, Limacher MC, Wilhelmsen KC, Hofman A, Uitterlinden A, Krijthe BP, Zhang Z-M, Schnabel RB, Kaab S, van Duijn C, Rotter JI, Sotoodehnia N, Volker W, Dorr M, Li Y, Soliman EZ, Alonso A, Whitsel EA, Stricker BH, Benjamin EJ, Heckbert SR, Ellinor PT. Sixteen genetic loci associated with the electrocardiographic P wave. *Circ Cardiovasc Genet*, 2017 Aug. 10(4): e001667.

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16. Agarwal SK, **Avery CL**, Catellier D, Chang P, Rhodes CE, Shahar E, Ballantyne CM, Heiss G, Hoogeveen RC. Variability in the measurement of high sensitivity troponin T (hsTNT): The Atherosclerosis Risk in Communities (ARIC) Study. *Clinical Chemistry* 2011; 57(6): 891-7. PMC Journal – In Process.
15. Whitsel EA and **Avery CL**. The Environmental Epidemiology of Atrial Arrhythmogenesis: A Research Agenda. *Journal of Epidemiology and Community Health* 2010; 64(7): 587-90. PMC Journal – In Process.
14. **Avery CL**, Mills KT, Williams R, McGraw KA, Poole C, Smith RL, Whitsel EA. Estimating error in using residential outdoor PM_{2.5} concentrations as proxies for personal exposures: a meta-analysis. *Environmental Health Perspectives* 2010; 118(5): 673-8. PMID: PMC2866684.
13. **Avery CL**, Mills KT, Chambless LE, Chang PP, Folsom AR, Mosley TH, Ni H, Rosamond WD, Wagenknecht L, Wood J, Heiss G. Long-term association of heart failure hospitalizations with self-reported signs and symptoms: The Atherosclerosis Risk in Communities (ARIC) Study. *European Journal of Heart Failure* 2010; 12(3): 232-8. PMID: PMC2821798.
12. **Avery CL**, Mills KT, Williams R, McGraw KA, Poole C, Smith RL, Whitsel EA. Estimating error in using ambient PM_{2.5} concentrations as proxies for personal exposures. *Epidemiology* 2010; 21(2): 215-223. PMC Journal – In Process.
11. North KE, Franceschini N, **Avery CL**, Baird L, Leppert M, Chung J, Hanis C, Boerwinkle E, Volcik K, Grove-Caona M, Gu C, Heiss G, Pankow J, Couper D, Ballantyne C, Kao L, Weder A, Cooper R, Ehert G, Chakravarti A, Hunt SC. Variation in the checkpoint kinase 2 gene is associated with type 2 diabetes in multiple populations. *Acta Diabetologia* 2010; 47 (Suppl 1): 199-207. PMID: PMC2965317.
10. **Avery CL**, Monda KL, and North KE. Genetic association studies and the effect of misclassification and selection bias in putative confounders. *BMC Proceedings* 2009, 3(Suppl 7):S48. PMID: PMC2795947.
9. Whitsel EA and **Avery CL**. The association between long-term particulate matter exposure and cardiovascular disease morbidity. United States Environmental Protection Agency. Integrated Science Assessment for Particulate Matter (Second External Review Draft). U.S. EPA, Washington, DC, EPA/600/R-08/139-B; 2009. Available at: <http://cfpub.epa.gov/ncea/cfm/recordisplay.cfm?deid=210586>.

8. Martin LJ, Woo JG, **Avery CL**, Chen H, North KE. Multiple testing in the genomics era: Findings from Genetic Analysis Workshop 15, Group 15. *Genetic Epidemiology* 2007; 31(S1): S124-S131. PMC Journal – In Process.
7. Lee CR, North KE, Bray MS, **Avery CL**, Mosher MJ, Couper DJ, Coresh J, Folsom AR, Boerwinkle E, Heiss G, Zeldin DC. Genetic variation in endothelial nitric oxide synthase (*NOS3*), cigarette smoking, and cardiovascular disease risk: an Atherosclerosis Risk in Communities (ARIC) study. *Pharmacogenetics and Genomics* 2006;16: 891-899. PMID: PMC1978174.
6. Zeng D, Lin DY, **Avery CL**, North KE, Bray MS. Efficient semiparametric estimation of haplotype-disease associations in case-cohort and nested case-control studies. *Biostatistics* 2006;7:486-502. PMC Journal – In Process.
5. **Avery CL**, Freedman BI, Kraja A, Borecki IB, Miller MB, Pankow JS, Arnett D, Lewis CE, Myers RH, Hunt SC, North KE. Genotype-by-sex interaction in the etiology of diabetes: Support for sex-specific QTLs in HyperGEN participants. *Diabetologia* 2006;49:2329-36. PMC Journal – In Process.
4. **Avery CL**, Martin LJ, Williams JT, North KE. Accuracy of haplotype estimation in a region of low linkage disequilibrium. *BMC Genetics* 2005; 6(Suppl 1):S80. PMID: PMC1866700.
3. Martin LJ, **Avery CL**, Williams JT, North KE. Possible QTL-specific genotype by alcoholism interaction for evoked EEG oscillations. *BMC Genetics* 2005; 6(Suppl 1):S123. PMID: PMC1866814.
2. **Avery CL**, Freedman BI, Heiss G, Kraja A, Rice T, Arnett D, Miller MB, Pankow JS, Lewis CE, Myers RH, Hunt SC, Almasy L, North KE. Linkage analysis of diabetes status among hypertensive families: the HyperGEN Study. *Diabetes*. 2004;53:3307-12. PMC Journal – In Process.
1. Chen C, Bharucha V, Chen Y, Westenbroek R, Brown A, Malhotra J, Jones D, **Avery C**, Gillespie P, Kazen-Gillespie K, Saunders T, Macdonald R, Catterall W, LL Isom. Reduced Sodium Channel Density, Altered Voltage Dependence of Inactivation, and Increased Susceptibility to Seizures in Mice Lacking Sodium Channel $\beta 2$ Subunits. *Proc Nat Acad Sci USA*. 2002;99:17072-7. PMID: PMC139271.

TEACHING EXPERIENCE

University of North Carolina at Chapel Hill, Department of Epidemiology

Lead instructor	Epidemiologic Analysis of Binary Data, 2013- Number of students: 33-51
	Population Burden Measures in CVD Epidemiology, 2012- Number of students: 10-15
Co-instructor	Perspectives in Epidemiology and Public Health, 2014-15 Number of students: 10

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Theory and Quantitative Methods in Epidemiology, 2012
Number of students: 45

Invited lecturer Cardiovascular Disease Epidemiology, 2009-11, 15-
Number of students: ~15

Fundamentals of Epidemiology, 2014, 16
Number of students: ~45

Genetic Epidemiology: Methods and Applications, 2009-13
Number of students: ~15

Design of Clinical Research, 2012
Number of students: ~10

Pathobiology of CVD Pathology, 2013, 15, 16
Number of students: ~5

PopMED Forum (North Carolina State University), 2015
Number of students: ~20

University of Ulm, Germany (Summer Institute)

Lead instructor Epidemiologic Analysis of Binary Data, 2018
Number of students: 14

Genetic Epidemiology, 2011
Number of students: 30

GRADUATE STUDENT MENTORING

Current:

Dissertation chair:

- 1) Epidemiology: Chani Hodonsky (expected graduation: 08/2019)
- 2) Epidemiology: Antoine Baldassari (expected graduation: 12/2020)

Dissertation committee member:

- 1) Epidemiology: Dmitry Kats
- 2) Epidemiology: Sachiko Yoneyoma
- 3) Nutrition: Tania Aburto Soto
- 4) Nutrition: Yiqing Wang

Completed:

Dissertation chair (year graduated):

- 1) Epidemiology: Amanda Seyerle (2016)
- 2) Epidemiology: Joseph Engeda (2019)

Masters paper chair (year graduated):

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- 1) Epidemiology: Amanda Seyerle (2013)
- 2) Epidemiology: Antoine Baldassari (2018)

Dissertation committee member (year graduated):

- 1) Epidemiology: Quaker Harmon (2012)
- 2) Biostatistics: Qianchuan (Chad) He (2012)
- 3) Epidemiology: Annah Wyss (2013)
- 4) Epidemiology: Evan Busch (2015)
- 5) Epidemiology: Sara Jones (2015)
- 6) Epidemiology: Kapuaola Gellert (2016)
- 7) Epidemiology: Anna Bauer (2017)
- 8) Health Policy: Jamie Jarmul (2017)
- 9) Epidemiology: Aderonke Akinkugbe (2017)
- 10) Epidemiology: Shakia Hardy (2017)
- 11) Epidemiology: Erline Miller (2018)

Masters paper second reader (year graduated):

- 1) Epidemiology: Katelyn Holliday (2011)

POSTDOCTORAL MENTORING

Current: 1) Moa Park Lee (2018-)

Completed:

- 1) Raul Mendez Giraldez (2015-17)
- 2) Shannon Kapuaolakalaniakea Gellert (2016-18)

UNDERGRADUATE MENTORING

Current: 1) Sofia Dimos (2018)

Completed:

- 1) Ashlyn Stackhouse (2018)

GRADUATE STUDENT AND POSTDOCTORAL AWARDS*

**Restricted to awards where I am the primary mentor/senior author*

- 1) Katelyn Holliday (2014)
Recipient, Steven Blair Award for Excellence in Physical Activity Research, 2014 AHA EPI/Lifestyle conference
- 2) Shakia Hardy (2014)
Finalist, Jeremiah and Rose Stamler Research Award for New Investigators, 2014 AHA EPI/Lifestyle conference

PROFESSIONAL SERVICE

Advisory Committees

- 2012 Circulatory Device Advisory Committee panelist, U.S. Food and Drug Administration, Silver Spring, MD

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Invited Grant Reviews

- 2019 NIH KNOD study section ad hoc reviewer
- 2018 Mid-Atlantic NORC Pilot and Feasibility Grant ad hoc reviewer
- 2018 AHA Uncovering New Patterns ad hoc reviewer
- 2017 NIH CHS-B study section ad hoc reviewer
- 2016 NIH/NHLBI K01 special emphasis panel ad hoc reviewer
- 2015 AHA Behavioral Science - Prevention/Intervention ad hoc reviewer
- 2014 NIH CASE/EPIC study section (ZRG1 PSEQ 90) ad hoc reviewer
- 2012 Center for Environmental Health and Susceptibility (CEHS), University of North Carolina at Chapel Hill

Committee Membership

- 2014- Atherosclerosis Risk in Communities Ancillary Studies
- 2013- HCHS/SOL ECG genomics working group (chair)
- 2012- Women's Health Initiative Publications & Presentations
- 2011- University of North Carolina Department of Epidemiology Graduate Studies

Editorial

Invited Manuscript Review

- American Journal of Epidemiology* (2015 – 1)
- American Journal of Preventive Medicine* (2016 -1)
- American Heart Association abstract review (2012, 2016-)
- Annals of Epidemiology* (2018-1)
- Circulation* (2012 -1, 2013 – 2, 2014-2, 2015-1)
- Circulation Cardiovascular Genetics* (2012 -1)
- Clinical Genetics* (2017-1)
- Current Pharmacogenomics and Personalized Medicine* (2017-1)
- Diabetes* (2015 – 1)
- Diabetes Research and Clinical Practice* (2012 – 1)
- Diabetic Research* (2013 – 1)
- Environmental Health Perspectives* (2013- 2)
- Epidemiology* (2015 – 2; 2017-1)
- Genetic Epidemiology* (2012 -1)
- Heart* (2013 – 1, 2014-1)
- Journal of Internal Medicine* (2018 -1)
- North Carolina Medical Journal* (2013, 1)
- Pharmacoepidemiology and Drug Safety* (2015, 1)
- Pharmacy and Therapeutics* (2014, 1)
- PLoS One* (2013 – 1, 2014-1)
- Scientific Reports* (2016 -1)
- Society for Epidemiologic Research abstract review (2011, 2012)

Symposium Organizer

- Co-chair of 2011 North American Congress of Epidemiology symposium: "What role does the epidemiologist play in genetic epidemiology?"

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MEMBERSHIPS

- 2015 - Fellow of the American Heart Association (FAHA)
- 2003-15 Member, American Heart Association (2003-15)

INVITED SPEAKER

- 2019 NHLBI K to R01 Investigators meeting: “How persistence, mentorship, networking, and authenticity netted me my first R01(s)”
- 2019 Society for Epidemiology Research (SER): “How studying racially/ethnically diverse populations informs causal inference”
- 2012 University of North Carolina Cardiovascular Grand Rounds: “Genomic studies of the QT interval in admixed populations”