

Heather M. Highland, Ph.D.

EDUCATION

- 2015 Ph.D., Human and Molecular Genetics, The University of Texas MD Anderson Cancer Center, UTHealth Houston Graduate School of Biomedical Sciences.
Advisor: Craig L. Hanis
- 2007 B.S., Biology, Trinity University, Graduated *Cum Laude*

PROFESSIONAL EXPERIENCE

- 2025-present Research Assistant Professor, UTHealth Houston School of Public Health - Brownsville campus.
- 2025-present Adjunct Faculty, Professor, University of North Carolina, Department of Epidemiology
- 2020-2025 Research Assistant Professor, University of North Carolina, Department of Epidemiology
- 2019-present Statistical Editor, American Heart Association, *Circulation Research*
- 2015-2020 Postdoctoral Fellow, University of North Carolina, Department of Epidemiology
- 2007-2015 Graduate Research Assistant, Human Genetics Center, School of Public Health, University of Texas Health Science Center at Houston.
- 2006 Undergraduate Research Fellow, Trinity University
- 2004-2007 Teaching assistant for introductory biology labs, Trinity University
- 2005 Undergraduate Research Fellow, Institute of Biotechnology, University of Texas Health Science Center San Antonio

HONORS

- American Diabetes Association Postdoctoral Fellowship**, 2019-2020
- NHLBI Genetic Epidemiology of Heart, Lung, and Blood Traits training grant**, 2018
- Top 10% of accepted abstracts**, American Society of Human Genetics, 2017, 2018
- Top 10% of accepted abstracts**, American Heart Association EPI/Lifestyle, 2016
- Semifinalist for Charles J. Epstein Trainee Award for Excellence in Human Genetics Research**, American Society of Human Genetics, 2015
- NHLBI Cardiovascular Disease Training Grant**, 2015-2018
- Burroughs Wellcome Training Program in Gene-Environment Interaction**, 2010-2012
- Outstanding Poster**, Annual Human and Molecular Genetics Symposium University of Texas Health Science Center Houston, 2011, 2012, 2013
- Outstanding Poster**, 32nd West Coast Biological Sciences Undergraduate Research Conference, 2007
- Jacob Uhrich departmental merit scholarship**, Trinity University Department of Biology, 2006-2007

SERVICE

UTHealth Houston School of Public Health

Gillings's School of Public Health Department of Epidemiology

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| 2018-2019 | Peer Led Organizer, Cardiovascular Epidemiology group, University of North Carolina |
| 2016-2018 | Journal Club Organizer, Genetic Epidemiology Journal Club, University of North Carolina |
| 2020-present | Organize and lead hands on instructional modules training students and postdoctoral fellows in using field specific analytical software |
| 2023-2024 | Organize and lead cardiovascular disease journal club. |

School

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| 2012-2014 | Member of Recruitment Council, University of Texas Health Science Center at Houston, Graduate School of Biomedical Sciences |
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Professional Service

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| 2022 | Grant reviewer for Vanderbilt Diabetes Research and Training Center (DRTC) Discovery Pilot and Feasibility Project |
| 2022 | American Society of Human Genetics meeting abstract reviewer |
| 2022 | Grant Peer Reviewer Medical Research Council UKRI |
| 2022 | American Diabetes Association meeting abstract reviewer |
| 2019-present | Statistical Editor for <i>Circulation Research</i> |
| 2016 | Participant in American Society of Human Genetics public policy focus group |

I have served as a peer reviewer for numerous journals including:

- Circulation
- Cell Genomics
- Genes & Genomics
- Scientific Reports
- European Journal of Human Genetics
- American Journal of Human Genetics
- Nature Genetics
- Human Genetics
- Proceedings of the National Academy of Sciences
- Genetic Epidemiology
- GENE
- G3-Genes Genomes Genetics
- Diabetologia
- Annals of Human Biology

- EBioMedicine

MEMBERSHIPS

American Society of Human Genetics
 American Heart Association
 American Diabetes Association
 American Society of Nephrology
 International Genetic Epidemiology Society

BIBLIOGRAPHY AND PRODUCTS OF SCHOLARSHIP

REFEREED PAPERS/ARTICLES (SHOW AUTHOR ORDER AND INCLUDE PAGES FOR ALL PUBLISHED, IN PRESS, SUBMITTED, ETC.)

* indicates authors did equal work.
 97 publications, 7 other scholarly products

(1-97)

1. Qi B, **Highland HM**, Graff M, Bulik CM, Rhee SH, Stallings MC, Hewitt JK, Gustavson DE, Reynolds CA, North KE, Munn-Chernoff MA. A genetically informed cross-lagged twin study of the longitudinal association between addiction-related behaviors and obesity. *Addiction*. 2026; Under revision.
2. Frankel EG, Petty LE, Roshani R, Zhu W, Chen HH, Graff M, Landman JM, Howard AG, Zhang X, Anwar MY, Polikowsky H, Buchanan VL, Scartozzi A, Gutierrez A, Gordon-Larsen P, Fisher-Hoch SP, McCormick JB, North KE, Below JE, **Highland HM**. Multi-Omic Integration Reveals Inflammatory and Lipid Pathways Driving Type 2 Diabetes Risk. *Nat Metab*. 2026; Submitted.
3. Santovito LS, Roshani R, Yang Y, Wang TC, Lorenz A, **Highland HM**, Howard AG, Fisher-Hoch SP, McCormick JB, Mahadavinia M, Lee M, Below JE, North KE, Graff M, Bishehsari F. Accelerated biological aging correlates with clinical outcomes and predicts organ damage in a population at high risk of chronic metabolic diseases. 2026; Under revision.
4. Landman JM*, **Highland HM***, Perry A, Howard AG, Lorenz A, Palmer AB, Zhu W, Zhang X, Buchanan VL, Frankel EG, Roshani R, Scartozzi A, Anwar MY, Sprinkles J, Breidenbach A, Wang TC, Ballard CA, Sheng Q, Naylor M, Tamaroff J, Gutierrez A, Petty LE, Petty AS, Lippi B, Fernandez-Rhodes L, Chen HH, Krishnan M, Graff M, Meyer K, Lee M, Farber-Eger E, Wells Q, Young KL, Freedman JE, McCormick JB, Fisher-Hoch SP, Gamazon ER, Gordon-Larsen P, Below JE, North KE, Shah R. Proteomic signatures of pediatric cardiovascular and cardiometabolic traits demonstrate long-term modifiable drivers of adult disease. *Nat Metab*. 2026; Under revision.
5. Krishnan M, Anwar MY, Justice AE, Chittoor G, Chen HH, Roshani R, Scartozzi A, Dickerson RR, Smit RAJ, Preuss MH, Chami N, Hadad BS, Parra EJ, Cruz M, Hui Q, Wilson PWF, Sun YV, Zhang X, Linchangco GV, Kardia SLR, Faul JD, Weir DR, Bielak LF, **Highland**

HM, Young KL, Qi B, Wang Y, Fornage M, Haiman C, Cheng I, Peters U, Kooperberg C, Buyske S, McCormick JB, Fisher-Hoch SP, Lona-Durazo F, Peralta J, Gomez-Zamudio J, Rich SS, Ferrier KR, Lange EM, Gignoux CR, Kenny EE, Wojcik GL, Cho K, Gaziano MJ, Djousse L, Liu S, Vaidya D, de Mutsert R, Josyula NS, Bauer CR, Zhao W, Walker RW, Smith JA, Lange LA, Meyer MC, Liu CT, Yanek LR, Lee M, Raffield LM, Loos RJF, Gordon-Larsen P, Below JE, North KE, Graff M. Genome-wide association study provides novel insight into the genetic architecture of severe obesity. *PLoS Genet*. 2025;21(9):e1011842. Epub 20250912. doi: 10.1371/journal.pgen.1011842. PMID: 40939575; PMCID: PMC12443252.

6. Smit RAJ, Wade KH, Hui Q, Arias JD, Yin X, Christiansen MR, Yengo L, Preuss MH, Nakabuye M, Rocheleau G, Graham SE, Buchanan VL, Chittoor G, Graff M, Guindo-Martinez M, Lu Y, Marouli E, Sakaue S, Spracklen CN, Vedantam S, Wilson EP, Chen SH, Ferreira T, Ji Y, Karaderi T, Lull K, Machado M, Malden DE, Medina-Gomez C, Moore A, Rueger S, Akiyama M, Allison MA, Alvarez M, Andersen MK, Appadurai V, Arbeeve L, Bartell E, Bhaskar S, Bielak LF, Bis JC, Bollepalli S, Bork-Jensen J, Bradfield JP, Bradford Y, Brandl C, Braund PS, Brody JA, Broeckel U, Burgdorf KS, Cade BE, Cai Q, Camarda S, Campbell A, Canadas-Garre M, Chai JF, Chesi A, Choi SH, Christofidou P, Couture C, Cuellar-Partida G, Danning R, Degenhardt F, Delgado GE, Delitala A, Demirkan A, Deng X, Dietl A, Dimitriou M, Dimitrov L, Dorajoo R, Eichelmann F, Eliassen AU, Engmann JE, Erdos MR, Fairhurst-Hunter Z, Farmaki AE, Faul JD, Fernandez-Lopez JC, Forer L, Frank M, Freitag-Wolf S, Fritsche LG, Fuchsberger C, Galesloot TE, Gao Y, Geller F, Giannakopoulou O, Giulianini F, Gjessing AP, Goel A, Gordon SD, Gorski M, Grove J, Guo X, Gustafsson S, Haessler J, Hansen TF, Havulinna AS, Haworth SJ, Heard-Costa N, Hemerich D, **Highland HM**, Hindy G, Ho YL, Hofer E, Holliday E, Horn K, Hornsby WE, Hottenga JJ, Huang H, Huang J, Huerta-Chagoya A, Huo S, Hwang MY, Hwu CM, Iha H, Ikeda DD, Isono M, Jackson AU, Jansen IE, Jiang Y, Johansson I, Jonsson A, Jorgensen T, Kalafati IP, Kanai M, Kanoni S, Karhus LL, Kasturiratne A, Katsuya T, Kawaguchi T, Kember RL, Kentistou KA, Kim D, Kim HN, Kim YJ, Kleber ME, Knol MJ, Kurbasic A, Lauzon M, Le P, Lea R, Lee JY, Lee WJ, Leonard HL, Li H, Li SA, Li X, Li X, Liang J, Lin H, Lin K, Liu J, Liu X, Lo KS, Long J, Lores-Motta L, Luan J, Lyssenko V, Lyytikainen LP, Mahajan A, Malik MZ, Mamakou V, Mangino M, Manichaikul A, Marten J, Mattheisen M, McDaid AF, Mei Q, Meiselbach H, Melendez TL, Milaneschi Y, Miller JE, Millwood IY, Mishra PP, Mitchell RE, Mollehave LT, Mononen N, Mucha S, Munz M, Mykkanen J, Nakatochi M, Nardone GG, Nelson CP, Nethander M, Nho CW, Nielsen AA, Nolte IM, Nongmaithem SS, Noordam R, Ntalla I, Nutile T, Pandit A, Pauper M, Petersen ERB, Petersen LV, Piluso F, Polasek O, Poveda A, Pyarajan S, Raffield LM, Rakugi H, Ramirez J, Rasheed A, Raven D, Rayner NW, Riveros C, Rohde R, Ruggiero D, Ruotsalainen SE, Ryan KA, Sabater-Lleal M, Santin A, Saxena R, Scholz M, Shen B, Shi J, Shin JH, Sidore C, Sidorenko J, Sim X, Sliker RC, Smith AV, Smith JA, Smyth LJ, Southam L, Steinthorsdottir V, Sun L, Takeuchi F, Taylor KD, Tayo BO, Tcheandjie C, Terzikhan N, Tesolin P, Teumer A, Theusch E, Thompson DJ, Thorleifsson G, Timmers P, Trompet S, Turman C, Vaccargiu S, van der Laan SW, van der Most PJ, van Klinken JB, van Setten J, Verma SS, Verweij N, Veturi Y, Wang CA, Wang C, Wang JS, Wang L, Wang YX, Wang Z, Warren HR, Bin Wei W, Wen W, Wheeler WA, Wickremasinghe AR, Wielscher M, Winsvold BS, Wong A, Wuttke M, Xia R,

Yamamoto K, Yang J, Yao J, Young H, Yousri NA, Yu L, Zeng L, Zhang W, Zhang X, Zhao JH, Zhao W, Zhou W, Zimmermann ME, Zoledziowska M, t Hart LM, Adair LS, Adams HHH, Aguilar-Salinas CA, Al-Mulla F, Arnett DK, Asselbergs FW, Asvold BO, Attia J, Banas B, Bandinelli S, Beilin LJ, Bennett DA, Bergler T, Bharadwaj D, Biino G, Boerwinkle E, Boger CA, Borja JB, Bouchard C, Bowden DW, Brandslund I, Brumpton B, Buring JE, Caulfield MJ, Chambers JC, Chandak GR, Chanock SJ, Chaturvedi N, Ida Chen YD, Chen Z, Cheng CY, Cho YS, Christensen K, Christophersen IE, Ciullo M, Cole JW, Collins FS, Concas MP, Cooper RS, Cruz M, Cucca F, Cutler MJ, Damrauer SM, Dantoft TM, de Borst GJ, de Geus EJC, de Groot L, De Jager PL, de Kleijn DPV, de Silva HJ, Dedoussis GV, den Hollander AI, Du S, Easton DF, Eckardt KU, Elders PJM, Eliassen AH, Ellinor PT, Elmstahl S, Erdmann J, Evans MK, Fatkin D, Feenstra B, Feitosa MF, Ferrucci L, Florez JC, Ford I, Fornage M, Franke A, Franks PW, Freedman BI, Gieger C, Girotto G, Golightly YM, Gonzalez-Villalpando C, Gordon-Larsen P, Grallert H, Grant SFA, Grarup N, Griffiths L, Gudnason V, Haiman C, Hakonarson H, Hansen T, Hartman CA, Hattersley AT, Hayward C, Heid IM, Heng CK, Hengstenberg C, Herzig KH, Hewitt AW, Hishigaki H, Hougaard DM, Hoyng CB, Huang PL, Huang W, Huang WY, Huffman JE, Hunt SC, Hutri N, Hveem K, Hypponen E, Iacono WG, Ichihara S, Ikram MA, Isasi CR, Jarvelin MR, Jin ZB, Jockel KH, Jonas JB, Joshi PK, Jousilahti P, Jukema JW, Kahonen M, Kamatani Y, Kang KD, Kaprio J, Kardina SLR, Karpe F, Kato N, Kavousi M, Kee F, Kessler T, Khera AV, Khor CC, Kiemeny L, Kim BJ, Kim EK, Kim HL, Kirchhof P, Kivimaki M, Koh WP, Koistinen HA, Kokkinos A, Kooner JS, Kooperberg C, Kovacs P, Kraaijeveld A, Kraft P, Krauss RM, Kumari M, Kutalik Z, Laakso M, Lange LA, Langenberg C, Launer LJ, Lee H, Lee NR, Lehtimaki T, Lemaitre RN, Li H, Li L, Lieb W, Lin X, Lind L, Linneberg A, Liu CT, Liu J, Loeffler M, London B, Lu F, Lubitz SA, Mackey DA, Magnusson PKE, Manson JE, Marcus GM, Marques Vidal P, Martin NG, Marz W, Matsuda F, McCarthy MI, McGarrah RW, McGue M, McKnight AJ, Medland SE, Mellstrom D, Metspalu A, Mitchell BD, Mitchell P, Mook-Kanamori DO, Mori TA, Morris AD, Mucci LA, Munroe PB, Nalls MA, Nazarian S, Nelson AE, Neville MJ, Newton-Cheh C, Nielsen CS, Niinikoski H, Nikus K, Nothen MM, Ogunniyi A, Ohlsson C, Oldehinkel AJ, Orozco L, Pahkala K, Pajukanta P, Palmer CNA, Parra EJ, Pattaro C, Pedersen O, Pennell CE, Penninx B, Perusse L, Peters A, Peyser PA, Porteous DJ, Posthuma D, Power C, Pramstaller PP, Province MA, Psaty BM, Qi Q, Qu J, Rader DJ, Raitakari OT, Rallidis LS, Rao DC, Redline S, Reilly DF, Reiner AP, Rhee SY, Ridker PM, Rienstra M, Ripatti S, Ritchie MD, Rivadeneira F, Roden DM, Rosendaal FR, Rotter JI, Rudan I, Rutter F, Ryu S, Sabanayagam C, Salako B, Saleheen D, Salomaa V, Samani NJ, Sanghera DK, Sattar N, Schmidt B, Schmidt H, Schmidt R, Schulze MB, Schunkert H, Scott LJ, Scott RJ, Sever P, Sheu WHH, Shoemaker MB, Shu XO, Simonsick EM, Sims M, Singleton AB, Sinner MF, Smith JG, Snieder H, Spector TD, Spedicati B, Stampfer MJ, Stark KJ, Strachan DP, Tabara Y, Tai ES, Tang H, Tardif JC, Thanaraj TA, Tonjes A, Tuomi T, Tuomilehto J, Tusie-Luna MT, van Dam RM, van der Harst P, Van der Velde N, van Duijn CM, van Schoor NM, Vitart V, Vohl MC, Volker U, Vollenweider P, Volzke H, Vrieze S, Wachter-Rodarte NH, Walker M, Wander GS, Wareham NJ, Watanabe RM, Watkins H, Weir DR, Werge TM, Widen E, Willemsen G, Willett WC, Wilson JF, Wilson PWF, Wong TY, Woo JT, Wright AF, Xu H, Yajnik CS, Yang J, Yokota M, Yuan JM, Zeggini E, Zemel BS, Zheng W, Zhu X, Zillikens MC, Zonderman AB, Zwart JA, andMe Research T, DiscovEhr, eMerge, Gpc UGR, Consortium

- P, Understanding Society Scientific G, Program VAMV, Abecasis GR, Assimes TL, Auton A, Boehnke M, Chasman DI, Esko T, Stefansson K, Lettre G, Lindgren CM, Ng MCY, O'Donnell CJ, Thorsteinsdottir U, Visscher PM, Walters RG, Winkler TW, Wood AR, Deloukas P, Frayling TM, Justice AE, Kilpelainen TO, Locke AE, Mohlke KL, North KE, Okada Y, Willer CJ, Young KL, Fatumo S, McCaffery JM, Timpson NJ, Hirschhorn JN, Sun YV, Berndt SI, Loos RJF. Polygenic prediction of body mass index and obesity through the life course and across ancestries. *Nat Med*. 2025;31(9):3151–68. Epub 20250721. doi: 10.1038/s41591-025-03827-z. PMID: 40691366; PMCID: PMC12443623.
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 9. Pruett DG, Scartozzi AC, Polikowsky HG, **Highland HM**, Shaw DM, Petty LE, Petty AS, Kraft SJ, Below JE. Challenges and Opportunities in Characterizing the Genetics of Stuttering: From Sample Acquisition to Functional Interpretation of the Genome. *J Speech Lang Hear Res*. 2025;68(11):5137–57. Epub 20251017. doi: 10.1044/2025_JSLHR-25-00093. PMID: 41105951; PMCID: PMC12614926.
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- Lifestyle Genom. 2025;18(1):90–7. Epub 20250530. doi: 10.1159/000546100. PMID: 40451158; PMCID: PMC12235720.
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 13. Chen HH*, **Highland HM***, Frankel EG, Scartozzi AC, Zhang X, Roshani R, Sharma P, Kar A, Buchanan VL, Polikowsky HG, Petty LE, Seo J, Anwar MY, Kim D, Graff M, Young KL, Zhu W, Karastergiou K, Shaw DM, Justice AE, Fernandez-Rhodes L, Krishnan M, Gutierrez A, McCormick PJ, Aguilar-Salinas CA, Tusie-Luna MT, Munoz-Hernandez LL, Herrera-Hernandez M, Lee M, Gamazon ER, Cox NJ, Pajukanta P, Fried SK, Gordon-Larsen P, Shah RV, Fisher-Hoch SP, McCormick JB, North KE, Below JE. Multiomics reveal key inflammatory drivers of severe obesity: IL4R, LILRA5, and OSM. *Cell Genom.* 2025;5(3):100784. Epub 20250304. doi: 10.1016/j.xgen.2025.100784. PMID: 40043711; PMCID: PMC11960538.
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 15. Shrestha P, Graff M, Gu Y, Wang Y, Avery CL, Ginnis J, Simancas-Pallares MA, Ferreira Zandona AG, Alotaibi RN, Orlova E, Ahn HS, Nguyen KN, **Highland HM**, Lin DY, Preisser JS, Slade GD, Marazita ML, North KE, Divaris K. Multiancestry Genome-Wide Association Study of Early Childhood Caries. *J Dent Res.* 2025;104(3):280–9. Epub 20241219. doi: 10.1177/00220345241291528. PMID: 39698793; PMCID: PMC11843792.
 16. Anwar MY, **Highland HM**, Sheng Q, Chen HH, Roshani R, Frankel EG, Landman J, Kim D, Young KL, Zhu W, Krishnan M, Gutierrez A, Gordon-Larsen P, Lee M, Gamazon ER, Amancherla K, Das S, Betti MJ, Fisher-Hoch SP, McCormick JB, Below JE, Graff M, Shah RV, North KE. Multi-omics of human obesity and related multi-system diseases. *J Clin Endocrinol Metab.* 2025. Epub 20250624. doi: 10.1210/clinem/dgaf373. PMID: 40581728; PMCID: forthcoming, accepted prior to current NIH policy.
 17. Anwar MY, **Highland HM**, Palmer AB, Duong T, Lin Z, Zhu W, Sprinkles J, Kim D, Young KL, Chen HH, Krishnan M, Gutierrez A, Roshani R, Frankel EG, Landman J, Gordon-Larsen P, Lee M, Fisher-Hoch SP, McCormick JB, Curran J, Blangero J, Meikle PJ, Giles C, Below JE, North KE, Graff M. The Circulating Lipidome In Severe Obesity. *medRxiv.* 2025. Epub 20250613. doi: 10.1101/2025.06.11.25329456. PMID: 40585134; PMCID: PMC12204428.
 18. Downie CG, **Highland HM**, Alotaibi M, Welch BM, Howard AG, Cheng S, Miller N, Jain M, Kaplan RC, Lilly AG, Long T, Sofer T, Thyagarajan B, Yu B, North KE, Avery CL. Genome-wide association study reveals shared and distinct genetic architecture of fatty acids and oxylipins in the Hispanic Community Health Study/Study of Latinos. *HGG Adv.*

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19. Ferrier K, Graff M, Konigsberg IR, Stanislawski M, **Highland HM**, Raffield LM, Carson AP, Boerwinkle E, Norris JM, Gignoux CR, Hendricks AE, Raghavan S, North KE, Allison MA, Budoff MJ, Kasela S, Aguet F, Joseph JJ, Kooperberg C, Rich SS, Rotter JI, Lange EM, Lange LA. Epigenome-wide association study meta-analysis of BMI in African American Adults. medRxiv. 2025. Epub 20250211. doi: 10.1101/2025.01.15.25320607. PMID: 39867370; PMCID: PMC11759601.
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REFEREED OTHER PRODUCTS OF SCHOLARSHIP

1. **Highland HM**, Sanchez-Roige S, Im HK. Invited session co-chair. “Cross-ancestry genomic research: Time to bridge the gap” American Society of Human Genetics, 2021 October; virtual.
2. **Highland HM**, Wessel J and Manning A. 30-OR: Whole Genome Sequence Analysis of Type 2 Diabetes Risk in 44,713 Humans of Diverse Ancestry in the TOPMed Study. *Diabetes*. 2019;68:30-OR. https://diabetes.diabetesjournals.org/content/68/Supplement_1/30-OR
3. **Highland HM**. Invited Session Chair. “Diversity Matters: Scientific and Ethical Strategies for Achieving Representation in Genomics.” American Society of Human Genetics; 2017 October; Orlando, FL.
4. **Highland HM**, Stitlani CM, Seyerle AA, Gondalia R, Graff M, Avery CL and North KE. Pleiotropic effects on BMI, WHR, fasting glucose, and fasting insulin levels. Paper presented at: American Society of Human Genetics; 2016. https://www.ashg.org/wp-content/uploads/2019/10/2016-plenary_platform_abstracts.pdf
5. **Highland HM**, Turcot V, Lu Y, Young KL, Wang J, Lenzini P, Graff M, Cupples AL, Frayling TM, Hirschhorn J, Lettre G, North KE, Borecki IB and Loos RJF. ExomeChip meta-analysis of 526,508 individuals from five ancestries identifies novel coding variation associated with body mass index. Paper presented at: American Society of Human Genetics; 2015;

Baltimore, MD. <https://www.ashg.org/wp-content/uploads/2019/10/2015-platform-abstracts-min.pdf>

6. **Highland HM**, Manning AK, Sim X, Im HK, Mahajan A, Rivas MA, Locke AE, Grarup N, Ng HJ, Fontanillas P, Morris AP, Teslovich TM, Flannick JA, Fuchsberger C, Gaulton KJ, Kang HM, Gloyn AL, Meigs JB, Lindgren CM, Consortium TDG and Go TDC. Exome Sequencing and Exome Chip Genotyping to Understand the Role of Coding Variation in Glycemic Trait. Paper presented at: American Diabetes Association; 2014; San Francisco, CA. https://diabetes.diabetesjournals.org/content/63/Supplement_1
7. **Highland HM**, Sim X, Manning A, Rivas MA, Atzmon G, Choi S, Cornes BK, Dupuis J, Florez JC, Fontanillas P, Frayling TM, Gamazon ER, Huh IS, Im HK, Kim J, Kim YJ, Lindgren CM, Locke A, Meigs JB, Morris AP, Palmer N, Prokopenko I, Teslovich TM and Consortium TD-G. The impact of genetic variation on diabetes-related quantitative traits from whole exome sequences: The T2D-GENES Consortium. Paper presented at: American Society of Human Genetics; 2012; San Francisco, CA. <https://www.ashg.org/wp-content/uploads/2019/10/2012-platform-abstracts.pdf>

OTHER INVITED TALKS

1. **Highland HM**, Graff M, Below JE. Education Workshop: Multi-omics Data Integration. International Genetic Epidemiology Society Meeting. November 5, 2023.
2. **Highland HM**. A multi-omics approach to understanding the role of APOL1 in CKD amongst African Ancestry individuals. University of Tennessee Health Science Center, Department of Biostatistics. October 17, 2022.

DIGITAL AND OTHER NOVEL FORMS OF SCHOLARSHIP

1. **Highland HM**. Importance of Diversity in Science. ASHG TV Interview. October 20, 2018. https://www.youtube.com/watch?v=UTcq6e_UaPU
2. **Highland HM**, Nickerson ML. Leveraging NGS Data to Unlock the Biological Mysteries in Cancer and Diabetes. The Scientist, webinar: April 25, 2013.

THESIS/DISSERTATION

1. **Highland HM**. Genetics of Obesity in Starr County, Texas Mexican Americans. *Human and Molecular Genetics*. 2015;Ph.D.

TEACHING ACTIVITIES

University of North Carolina

- Course designer and co-primary lecturer, EPID 889 “Topics in Epidemiology”, Fall 2021, Spring 2022, Spring 2023, Spring 2024
 - This course teaches hands on genetic data analysis methodologies providing examples and troubleshooting advice

- Lecturer, lecture on transcriptomic imputation, EPID 889 “Topics in Epidemiology”, 2020
- Lecturer, two to three lectures, EPID 743 “Genetic Epidemiology”, 2016-present
- Lecturer, one lecture on 1000 Genomes and TOPMed projects, BCB 723, “Topics in Statistical Genetics and Genomics”, 2018-present

University of Texas Health Science Center at Houston

- Lecturer, a lecture on obesity genetics, Genetic Epidemiology of Chronic Diseases, 2010-2015

Student Mentoring

2024	Ballard, Christine. University of North Carolina, Ph.D. Student in Epidemiology. I am supervised a practicum, analyzing metabolic traits in pediatric samples from Cameron County, TX.
2023-2025	Qi, Baiyu. University of North Carolina, Ph.D. Student in Epidemiology. I am a dissertation committee member and oversee her genetic analyses.
2022-2023	Okello, Samson. University of North Carolina, Ph.D. Student in Epidemiology. I oversaw a practicum, doing quality control analyses of a genetic dataset.
2022-2023	Pleasants, Hannah. Elon University, undergraduate in public health. I am co-mentoring Hannah on a project looking at the social determinants of health on diabetes in Mexican Americans from Cameron County, Texas.
2021-2025	Yang, Peter. University of North Carolina, Ph.D. Student in Epidemiology. I am co-mentoring a new Ph.D. student. As PAGE diabetes working group co-chair I am fostering his involvement in the development of a type 1 diabetes project that extends his prior work to new scientific questions in additional datasets.
2021-2022	Memili, Aylin. University of North Carolina, M.S. Student in Nutrition. I mentor this student, helping with analytical challenges, life balance, and preparing her for a platform presentation at a national meeting.
2021-2023	Li, Yilun. University of North Carolina, Ph.D. Student in Biostatistics. I helped with teaching investigation and accounting for the biological implications of his analyses. I was a member of his dissertation committee.
2021-2024	Krishnan, Mohanraj. University of North Carolina, postdoctoral fellow in Epidemiology. I meet weekly with this trainee to assess his progress and foster development of his projects integrating genomics and untargeted metabolomics.
2021-2025	Zhang, Xinruo “Alice”. University of North Carolina, Ph.D. Student in Epidemiology. I supervise Alice’s involvement with many collaborative projects in the PAGE and TOPMed consortium. I am a member of her dissertation committee.
2020-2023	Buchanan, Victoria. University of North Carolina, Ph.D. Student in Epidemiology. I’ve long held a working relationship with Victoria. She often seeks my advice of analytical challenges. I am a member of her dissertation committee.
2019-2023	Baldassari, Antione. University of North Carolina, Ph.D. Student in Epidemiology. I meet with this student weekly to ensure progress in his dissertation proposal.
2019-2023	Downie, Carolina. University of North Carolina, Ph.D. Student in Epidemiology. I co-mentor Miss Downie with her primary mentor Dr. Christy Avery. I co-

- authored a paper with Miss Downie on the genetics of glycemic traits in ancestrally diverse populations.
- 2019-2021 Dimos, Sofia University of North Carolina, undergraduate in computer science. With my oversight, Sofia has set up an analytical pipeline for genetic analysis using SUGEN. Miss Dimos developed the ability translate ideas into analytical tools.
- 2016-2019 Lin, Bridget. University of North Carolina, Ph.D. Student in Biostatistics. With my oversight, an analytical pipeline using GENESIS was set up for analysis of the HCHS/SOL genetic data.
- 2015-present I am available to all trainees in the CVD Epidemiology group for mentorship, analytical troubleshooting, and time/life management. As co-leader of the instructional modules with Dr. Mariaelisa Graff, students become comfortable reaching out to me for hands on help. Outside of standing meetings, I generally have several emails and have at least one Zoom session per week to help students with analytical challenges.

GRANTS

Project # R01-DK116028 Sotres-Alvarez NIDDK 07/01/2023-06/30/2024

Title: Preconceptional health of Latinas and its association with child adiposity

Description: Total costs \$ Role: Co-I

Project # 0001164014 Kooperberg NHGRI 08/01/2022-07/31/2023

Title: Polygenic Risk Scores for Diverse Populations Bridging Research and Clinical Care

Description: In this third phase of the PAGE study, we will continue to focus on improving improve the performance of polygenic risk scores for ancestrally diverse populations. Total costs (UNC-subaward) \$ Role: Co-I

Project # R01HG010297 Matise NHGRI 06/15/2019-03/31/2024

Title: PAGE III: Population Architecture using Genomics and Epidemiology

Description: In this third phase of the PAGE study, we will continue to focus on improving our understanding of the genetic underpinnings of common complex diseases in ancestrally diverse populations. Total costs (UNC-subaward) \$900,238 Role: Co-I

Project # R01HL143885 Gordon-Larsen NHLBI 04/01/2010-03/31/2025

Title : Leveraging multi-omics approaches to examine metabolic challenges of obesity in relation to cardiovascular diseases

Description: This project will assess the role of metabolomics as both a cause and consequence of CVD risk factors within the CARDIA study. Total costs: \$8,894,348 Role: Co-I

Project # R01HL147853 Avery NHLBI 01/01/2020-12/31/2024

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. Total costs: \$3,875,000. Role: Co-I

Project # R01HL142825 Avery NHLBI 02/10/2019-01/31/2025

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: Co-I

Project #1-19-PDF-045 Highland ADA 01/01/2019-12/31/2020

Title: Identification of pleiotropic loci affecting type 2 diabetes, adiposity, and renal disease

Description: This study will examine the role of shared genetic effects in the etiology of diabetes related traits including glycemic, adiposity, and kidney function traits. Role: PI

NIH Loan Repayment Program Highland NHGRI 07/01/2017-06/30/2021

Title: Characterizing pleiotropy in cardiometabolic phenotypes among diverse populations

Description: This grant pays back my student loans while I continue to conduct qualifying research at nonprofit or of US government entity. Role: PI

Project #: 2R01HD057194-06 Gordon-Larsen, North NICHD 01/1/2008-06/30/2019

Title: Exome Variants Underlying Weight Gain from Adolescence to Adulthood

Description: This project will examine gene-by-environment interactions on trajectories of weight gain from adolescence to young adulthood. Role: Analyst