

James Baker

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EDUCATION

2019-Present	Doctoral Student, Human Genetics Vanderbilt University, Nashville, TN
2019	Bachelor of Science in Biochemistry North Carolina State University, Raleigh, NC
2018	Bachelor of Science in Chemistry North Carolina State University, Raleigh, NC

GRANTS & FELLOWSHIPS

July 2020-2022	NIGMS T32 Pre-Doctoral Training Grant, Genetic Variation & Human Phenotypes (T32GM080178) Vanderbilt Genetics Institute, Vanderbilt University School of Medicine, Nashville, TN
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RESEARCH EXPERIENCE

May 2021-Present	Graduate Researcher PIs: David Samuels, PhD, Jennifer Below, PhD Division of Genetic Medicine, Vanderbilt University Medical Center, Nashville, TN
Aug 2018- Aug 2019	Undergraduate Student Researcher PI: Christian Melander, PhD Department of Chemistry, North Carolina State University, Raleigh, NC Projects: <i>Meridianin D Analogues Display Antibiofilm Activity against MRSA and Increase Colistin Efficacy in Gram-Negative Bacteria</i>

PUBLICATIONS

Alexandra Scalici, **James T Baker**, Freida Blostein, Megan Shuey, Dharmendra Choudhary, Ela W Knapik, David C Samuels, Jennifer E Below, Lisa Bastarache, Tyne W Miller-Fleming, Nancy J Cox. Common variant approaches to study Mendelian disease gene function identify novel phenotype and pathways associated with PLOD3. MedRxiv 2025. doi: <https://doi.org/10.1101/2025.11.25.25340832>

Cecile Avery, Mojgan Babanejad, **James Baker**, Xavier Bledsoe, Freida Blostein, Robert W Corty, Kimberlyn Ellis, Adriana M Hung, Allison Lake, John Shelley, Quanhu Sheng, Vanderbilt University Medical Center and Alliance for Genomic Discovery Investigators, Melinda Aldrich, Melissa Basford, Lisa Bastarache, Jennifer Below, Alexander G Bick, Peter Embi, QiPing Feng, Eric Gamazon, Lide Han, JIBRIL HIRBO, Kayla Marginean, Jonathan Mosley, Jill Pulley, Dan M. Roden, Douglas M Ruderfer, Megan Shuey, Yu Shyr, C Michael Stein, Colin Walsh, Consuelo Wilkins. Genome sequencing of 35,024 predominantly African ancestry persons addresses gaps in genomics and healthcare. MedRxiv 2025. doi: <https://doi.org/10.1101/2025.10.30.25338549>

Evans GF, **Baker JT**, Petty LE, Petty AS, Polikowsky HG, Bohlender RJ, Chen HH, Chou CY, Viljoen KZ, Beilby JM, Kraft SJ, Zhu W, Landman JM, Morrow AR, Bian D, Scartozzi AC, Huff CD, Below JE. COMPADRE: Combined pedigree-aware distant relatedness estimation for improved pedigree reconstruction. *Am J Hum Genet.* 2025 Oct 9:S0002-9297(25)00367-2. doi: 10.1016/j.ajhg.2025.09.011. Epub ahead of print. PMID: 41072407.

Friedman RK, Heath AS, Huffman JE, **Baker JT**, Hasbani NR, Gagliano Taliun SA, Chen MH, Howard TE, Lewis JP, Pankratz N, Patil S, Reiner AP, Thibord F, Yanek LR, Yao J, Chen HH, Curran JE, Faraday N, Guo X, Wheeler MM, Ryan KA, Zhou X, Cho K, Almasy L, Auer PL, Becker LC, Wilson PWF, Boerwinkle E, O'Connell JR, Rich SS, Samuels DC; NHLBI Trans-Omics for Precision Medicine (TOPMed) Consortium; TOPMed Hematology & Hemostasis Working Group; VA Million Veteran Program; Blangero J, Fornage M, Kooperberg C, Mathias RA, Mitchell BD, Rotter JI, Johnson AD, Smith NL, Coban-Akdemir ZH, Below JE, Morrison AC, Johnsen JM, de Vries PS. Genetic study of von Willebrand factor antigen levels \leq 50 IU/dL identifies variants associated with increased risk of VWD and bleeding. *J Thromb Haemost.* 2025 May 12:S1538-7836(25)00311-3. doi: 10.1016/j.jtha.2025.04.029. Epub ahead of print. PMID: 40368142.

Scalici A, Miller-Fleming TW, Shuey MM, **Baker JT**, Betti M, Hirbo J, Knapik EW, Cox NJ. Gene and phenotype-based analysis of the shared genetic architecture of eye diseases. *Am J Hum Genet.* 2025 Feb 6;112(2):318-331. doi: 10.1016/j.ajhg.2025.01.004. Epub 2025 Jan 28. PMID: 39879988.

Lancaster MC, Chen HH, Shoemaker MB, Fleming MR, Strickland TL, **Baker JT**, Evans GF, Polikowsky HG, Samuels DC, Huff CD, Roden DM, Below JE. Detection of distant relatedness in biobanks to identify undiagnosed cases of Mendelian disease as applied to Long QT syndrome. *Nat Commun.* 2024 Aug 29;15(1):7507. doi: 10.1038/s41467-024-51977-4. PMID: 39209900; PMCID: PMC11362435.

Below, J., Shaw, D., Evans, G., **Baker, J.**, Bohlender, R., Petty, A., Petty, L., Roshani, R., Lifferth, J., Bastarache, L., Naj, A., Bush, W., Darby, R., McMillan, C., Samuels, D., Huff, C. (2023). Machine-learning based classification of Frontotemporal dementia in electronic health records for genetic discovery. *Alzheimer's & dementia.* 2023 Dec 35; <https://doi.org/10.1002/alz.080074>

Huggins, W. M., Vu Nguyen, T., Hahn, N. A., **Baker, J.T.**, Kuo, L. G., Kaur, D., Melander, R. J., Gunn, J. S., & Melander, C. (2018). 2-aminobenzimidazoles as antibiofilm agents against salmonella enterica serovar typhimurium. *MedChemComm*, 9(9), 1547–1552. <https://doi.org/10.1039/c8md00298c>

Huggins, W. M., Barker, W. T., **Baker, J.T.**, Hahn, N. A., Melander, R. J., & Melander, C. (2018). Meridianin D analogues display antibiofilm activity against MRSA and increase colistin efficacy in gram-negative bacteria. *ACS Medicinal Chemistry Letters*, 9(7), 702–707. <https://doi.org/10.1021/acsmedchemlett.8b00161>

CONFERENCE PRESENTATIONS

Baker, J., Chen, H., Evans, G., Scartozzi, A., Huff, C. Wells, Q., Samuels, D., Below, J., DRIVE v3: command line application for IBD haplotype clustering in large biobank scale data, *Annual Meeting of the American Society of Human Genetics. Boston, US.* October 2025 (Poster Presentation)

Baker, J., Evans, G., Bohlender, R., Chen, HH., Morrow A., Landman, J., Petty, A., Huff, C., Samuels, D., Below, J., Discrepancies between two Identity-by-Descent based methods, *Annual Meeting of the International Genetic Epidemiology Society, Denver, CO.* November 2024 (Poster Presentation)

Baker, J., Landman, J., Evans, G., Chen, HH., Petty, A., Bohlander, R., Huff, C., Samuels, D., Below, J., Phenome-wide Identity-by-Descent Mapping with BioVU's African American Population. *Annual Meeting of the American Society of Human Genetics. Washington DC, US.* October 2023 (Poster Presentation)

Baker, J., Chen, HH., Wells, Q., Samuels, D., Below, J. Leveraging identity by descent within biobanks to elucidate genetic architecture of dilated cardiomyopathy. *Annual Meeting of the International Genetic Epidemiology Society. Nashville, TN.* November 2023 (Poster Presentation)

Baker, J., Chen, HH., Brantley, M., Below, J., Samuels, D. Using genetic relatedness within biobanks to understand genetic architecture of Retinitis Pigmentosa. *Annual Meeting of the American Society of Human Genetics. Los Angeles, CA.* October 2022 (Poster Presentation)

Baker, J., Chen, HH., Polikowsky, H., Karastergiou, K., Fried, S., McCormick, J., Fisher-Hoch, S., Samuels, D., North, K., Below, J. Leveraging Identity by Descent to Investigate the Role of EGS16 in Obesity. *Annual Meeting of the International Genetic Epidemiology Society. Paris, France.* September 2022 (Poster Presentation)

ABSTRACTS

Scalici, A., Xu, J., Johnston, K., **Baker, J.**, Fleming, T., Cox, N., Huckins, L., Leveraging PheRS to understand comorbidity profiles and genetic architecture of eating disorders. *International Conference on Eating Disorders. The Hague, Netherlands*

Evans, G., Bohlender, R., Petty, A., Petty, L., Chen, HH., **Baker, J.**, Below, J., Huff, C., IBDMap: Biobank scale shared Segments Analysis. *Annual Meeting of the International Genetic Epidemiology Society. Paris, France*

Chen, HH., Lancaster, M., Fleming, M., **Baker, J.**, Samuels, D., Huff, C., Roden, D., Below, J. Genomic Shared Segments Enable Identification of At-risk Patients in Biobanks. *Annual Meeting of the International Genetic Epidemiology Society. Paris, France*

TEACHING & MENTORSHIP EXPERIENCE

Fall 2020-Fall 2024 Teaching Assistant
 Introduction to Python Programming for Genomic Data Analysis

PROFESSIONAL ASSOCIATIONS

2021-Present Member, American Society for Human Genetics
2021-2024 Member, International Genetic Epidemiology Society

AFFILIATIONS

2022-Present Graduate Student/Trainee, Vanderbilt University Medical Center, Nashville, TN

PROFESSIONAL CERTIFICATIONS

2020-2027	Biomedical Research Investigators and Key Personnel Vanderbilt University CITI Training Program
Summer of 2022	Responsible Conduct of Research for Biological and Physical Sciences Vanderbilt University Human Genetics Training Program
Summer of 2022	IGP 8004 Responsible Conduct in Research Vanderbilt University Interdisciplinary Graduate Program