

CURRICULUM VITAE

Charleen D. Adams

Research Fellow

Molecular and Integrative Physiological Sciences
Environmental Health

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Date prepared: 18 August 2021

I. EDUCATION

- 2016 University of Washington, PhD, Public-Health Genetics
- 2012 Johns Hopkins University, MPH, Genetic Epidemiology
- 2010 Trinity Lutheran Seminary, MTS, Divinity
- 2002 Northern Arizona University, MA, Applied Linguistics, with Distinction
- 2000 Northern Arizona University, BA, Speech Pathology & Audiology, *Summa Cum Laude*

II. PROFESSIONAL EXPERIENCE, POSITIONS & EMPLOYMENT

- 2020 Postdoctoral Fellow, Molecular and Integrative Physiological Sciences, Environmental Health, T.H. Chan School of Public Health, Harvard University
- 2018 Postdoctoral Fellow, Beckman Research Institute, City of Hope National Medical Center
- 2016 Postdoctoral Fellow, Integrative Cancer Epidemiology Programme, University of Bristol
- 2016 Teaching Assistant, Public-health Genetics Institute, University of Washington
- 2014 Predoctoral Epi Scholars Fellow, Jail Health Services, Public Health Seattle & King County
- 2013 Predoctoral Fellow, Public Health Sciences Division, Fred Hutchinson Cancer Research Center
- 2012 Predoctoral Fellow, Clinical Genetics Branch, National Cancer Institute
- 2011 Infectious Disease Epidemiology Intern, Boise Central District Health Department
- 2007 Genetics Consultant, Newborn Screening Program, Public Health Laboratories, State of Washington

III. HONORS, SCHOLARSHIPS & AWARDS

- 2014 Epi Scholars Award (national competition)
- 2013 Public Health Genetics Top Scholar Award
- 2011 Johns Hopkins Dean's Merit Scholar Award

IV. PUBLICATIONS

Publications (peer-reviewed)

1. **Adams CD** and Boutwell BB. Using multiple Mendelian randomization approaches and genetic correlations to understand obesity, urate, and gout. In press *Sci Rep* (2021).
2. Sammallahti S *et al.* Maternal anxiety during pregnancy and newborn epigenome-wide DNA methylation. *Mol Psychiatry* (2021). [Role: statistical analyst for the ALSPAC methylation samples]
3. **Adams CD.** A preliminary report on alcohol-associated DNA methylation changes and suicidal behavior: evidence using Mendelian randomization. *Illness, Crisis & Loss* (2021).
4. **Adams CD** and Boutwell BB. Can increasing years of schooling reduce type 2 diabetes (T2D)?—Evidence from a Mendelian randomization of T2D and 10 of its risk factors. *Sci Rep* **10**, 12908 (2020).
5. **Adams CD** and Boutwell BB. A Mendelian randomization study of telomere length and blood-cell traits. *Sci Rep* **10**, 12223 (2020).
6. **Adams CD** and Boutwell BB. Mendelian randomization & causal inference in criminology: promises & considerations. *J Exp Criminol* (2020).

7. **Adams CD.** Circulating sphingomyelins on estrogen receptor-negative (ER-) and estrogen receptor-positive (ER+) breast cancer-specific survival. *Breast Cancer Manag* (2020).
8. **Adams CD.** A Mendelian randomization study of circulating glutamine and red blood cell traits. *Pediatr Blood Cancer* (2020).
9. **Adams CD.** A multivariable Mendelian randomization to appraise the pleiotropy between intelligence, education, and bipolar disorder in relation to schizophrenia. *Sci Rep* **10**, 1–10 (2020).
10. **Adams CD.** Mendelian randomisation analysis of smoking behaviour and cognitive ability on the Big Five. *Psychreg J Psychol* **4**, 81–97 (2020).
11. **Adams CD.** Circulating glutamine and Alzheimer’s disease: a Mendelian randomization study. *Clinical Interv Aging* **15**, 185–193 (2020).
12. **Adams CD.** Null effect of circulating sphingomyelins on risk for breast cancer: a Mendelian randomization report using Breast Cancer Association Consortium (BCAC) data. *F1000Research* **8**, 2119 (2019).
13. **Adams CD & Neuhausen SL.** Epithelial ovarian cancer and schizophrenia and schizophrenia on circulating 1- or 2-glycerophosphocholine metabolites: a Mendelian randomization study. *Mol Genet Metab Rep* **21**, 100539 (2019).
14. **Adams CD & Neuhausen, SL.** Evaluating causal associations between chronotype and fatty acids and between fatty acids and type 2 diabetes: a Mendelian randomization study. *Nutr Metab Cardiovasc Dis* **29**, 1176–1184 (2019).
15. **Adams CD et al.** Circulating metabolic biomarkers of screen-detected prostate cancer in the ProtecT study. *Cancer Epidemiol Biomarkers Prev* **28**, 208–216 (2019).
16. **Beynon R et al.** Investigating the effects of lycopene and green tea on the metabolome of men at risk of prostate cancer: the ProDiet factorial randomized controlled trial and Mendelian randomization study. *Int J Cancer* **144**, 1918–1928 (2019).
17. **Adams CD, Blacksher E, and Burke W.** The precautionary principle for shift-work research and decision-making. *Public Health Ethics* **12**, 44–53 (2019).
18. **Adams CD et al.** Nightshift work, chronotype, and genome-wide DNA methylation in blood. *Epigenetics* **12**, 833–840 (2017).
19. **Kalejaiye A et al.** Otologic manifestations of Fanconi anemia and other inherited bone marrow failure syndromes. *Pediatr Blood Cancer* **63**, 2139–2145 (2016).
20. **Pathak A et al.** Prospectively identified incident testicular cancer risk in a familial testicular cancer cohort. *Cancer Epidemiol Biomarkers Prev* **24**, OF1-OF7 (2015).

Review Articles (peer-reviewed)

1. **Adams CD.** A brief tour of epigenetic epidemiology and mental health. *Curr Opin Psychol* (2018).

For the Public: Editorials, Letters, Interviews, Essays, Podcasts

Science:

1. **Adams CD.** Episode 26: Genetics and testicular cancer – insights from a public health researcher. *Max Mallory Foundation Podcast* (2021).
2. **Adams CD.** Election Fraud? *Medium* (2020).
3. **Adams CD.** Geneticists, let’s talk about forensic genetics at the US border. *Genes to Genomes* (2019).
4. **Adams CD, Blacksher E, and Burke W.** Nightshifts: circadian biology for public health. *Nature* **551** (2017).
5. **Adams CD.** Genetics, fear, and the slippery slope of moral authoritarianism. *Quillette* (2017).
6. **Bhatti P et al.** Response to ‘Civil time ≠ biological time: recent options for empirically testing possible effects of chronodisruption’. *Chronobiol Int*, **32**, 1-2 (2015).

Humanism:

1. **Adams CD.** An open letter to the community about cyberbullying and my thoughts on resilience. *Psychreg* (2019).
2. **Adams CD.** Plato and the value of mindfulness: freedom from identity. *Psychreg* (2019).
3. **Adams CD.** Shutting out dissent: Cambridge Divinity's rejection of Jordan Peterson. *Psychreg* (2019).
4. **Adams CD.** Tackling misdirected blame: disavowing all forms of anti-Semitism. Republished in *Quilliam* (2018).
5. **Adams CD.** Tackling misdirected blame: disavowing all forms of anti-Semitism. *Areo* (2018).
6. **Adams CD.** Female-intrasexual competition: from demons to better angels. *Areo* (2018).
7. **Adams CD.** Nothing human is foreign to me: on the nobility of science and the humanistic instinct. *Areo* (2018).

Interview with the popular press:

1. Lesley McClurg from National Public Radio (NPR) interviewed me, used me as a source, and quoted me in 'Government plans to expand DNA collection from migrant detainees':
<https://www.kqed.org/science/1956546/government-plans-to-expand-dna-collection-from-migrant-detainees>

Grant applied for (Title/Funder/Outcome)

- 2019 A crossover trial of 18-hour intermittent fasting on reducing metabolic syndrome in newly diagnosed breast cancer patients / Hilton-Ludwig Foundation Partnership / Not awarded
- 2019 Identifying open-chromatin signatures for morning and evening chronotype in female educators / City of Hope Core Pilot Award/Decision / Not awarded
- 2018 Epigenetic biomarkers of prostate-cancer progression: an appraisal of prediction (survival analysis) and mechanism (Mendelian randomization) / Cancer Research UK (CRUK) / Top candidate

Posters

1. **Adams CD.** Circulating glutamine and Alzheimer's disease: a Mendelian randomization study (2019). City of Hope, Duarte, CA.
2. **Adams CD,** Richmond R, Santos Ferreira D, Wurtz P, Donovan J, Hamdy F, Neal D, Relton C, Martin R, and the PRACTICAL Consortium (2017). The metabolome in prostate cancer. Mendelian Randomization Conference: In the Age of Large-Scale Accessible Genomics Data, Bristol, UK.
3. **Adams CD,** Zhang Y, Song X, Makar K, Sather C, Kelsey K, Houseman A, Wang P, Bhatti P (2015). Exploring the modifying effects of shift work on circadian gene methylation. 1st Public Health Genomics Symposium, Seattle, WA.
4. Pathak A, **Adams CD,** Loud JT, Nichols K, Stewart DR, Greene MH (2014). Prospectively identified incident testicular cancer risk in a familial testicular cancer cohort. 64th Annual Meeting of the American Society of Human Genetics, San Diego, CA.
5. Giri N, Kalejaiye A, **Adams CD,** Brewer CC, Zalewski CK, King K, Kim HJ, Alter BP (2014). Audiologic and otologic manifestations in Diamond-Blackfan anemia. DBA International Consensus Conference.
6. Kalejaiye A, Brewer CC, Zalewski CK, King K, Giri N, **Adams CD,** Rosenberg PS, Alter BP, Kim HJ (2013). Audiologic and otologic manifestations of Fanconi anemia and other inherited bone marrow failure syndromes. Combined Otolaryngology Spring Meetings, Orlando, FL.
7. **Adams CD,** Thompson JD, Glass M, and Weiss S (2010). Program evaluation and policy decisions to improve specificity of IRT/IRT for detecting cystic fibrosis among low birth weight babies. Newborn Screening and Genetic Testing Symposium, Orlando, FL.
8. Thompson JD, **Adams CD,** Dolle J, Weiss S, and Glass M (2009). Newborn screening and beyond: chronic disease management systems, partnerships and health disparities for sickle cell disease and cystic fibrosis. 16th Annual Washington State Joint Public Health Conference, Yakima, WA.

9. **Adams CD**, Weiss S, Glass M, and Thompson JD (2008). Use of primary thyroid-stimulating hormone to screen for congenital hypothyroidism (CH): observations in the detection of Asian babies with CH. Newborn Screening and Genetic Testing Symposium, Atlanta, GA.
10. **Adams CD**, Weiss S, Glass M, and Thompson JD (2008). Impact of switching to primary thyroid-stimulating hormone on detecting severe and mild congenital hypothyroidism (CH) in normal and low birth weight babies. Newborn Screening and Genetic Testing Symposium, Atlanta, GA.

V. INVITED SEMINARS/LECTURES/FORUMS

- 2017 The metabolome in prostate cancer, PRACTICAL/Ellipse Meeting, London, UK
 2017 Epidemiology in cancer research, Cancer Research UK (CRUK), Devizes, UK

VI. TEACHING/EDUCATION/EDUCATIONAL ACTIVITIES

- 2016 Teaching assistant, Implications of Public Health Genomics for the Modern World, PHG200, University of Washington
 2016 Chair, Epidemiology Fellow's Forum, Fred Hutchinson Cancer Research Center
 2002 Lecturer, Rhetoric in the Media, ENG121, Northern Arizona University
 2000 Lecturer, Critical Reading and Writing, ENG105, Northern Arizona University

Peer-reviewer

- 2020 *Cancer Epidemiol Biomarkers Prev*
 2019 *Mol Psychiatry*; *Cancer Epidemiol Biomarkers Prev*
 2018 *Cancer Epidemiol Biomarkers Prev*; *Am J Public Health*; *Chronobiol Int*
 2017 *Chronobiol Int*

Statistical projects

- 2019 *PIKCA3* pathway analysis of somatic mutations on RNAseq-predicted PAM50 molecular subtype in Latina breast cancer (designer, coder, and analyst)
 2018 Epigenome-wide association study (EWAS): Role of maternal anxiety on infant genome-wide methylation in ALSPAC (role: coder/analyst for the ALSPAC portion of the Pregnancy and Childhood Epigenetics Consortium's EWAS)
 2014 Program evaluation: Effectiveness of community intervention on recidivism in Seattle & King County (role: coder/analyst; propensity score and survival analysis)
 2011 Hopkins Capstone: A retrospective analysis of SNPs and cytomegalovirus retinitis among cases and controls enrolled in the Multicenter Aids Cohort Study (role: study designer and analyst for a modified GWAS)

VIII. REFERENCES

1. Dr Steve Rosen, MD, Provost, City of Hope; e-mail: srosen@coh.org
2. Dr Mark Greene, MD, Senior Scientist and former Branch Chief, Clinical Genetics Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute; e-mail: greenem@mail.nih.gov
3. Prof Wylie Burke, MD PhD, Professor and former Chair of the Department of Bioethics and Humanities, University of Washington; e-mail: wburke@uw.edu
4. Dr Parveen Bhatti, PhD MSc, Director, Cancer Prevention, BC Cancer Agency Research; e-mail: bhatti@bccrc.ca
5. Prof John Hogenesch, PhD, Professor of Pediatrics, Divisions of Human Genetics and Immunobiology, Cincinnati Children's Hospital; e-mail: john.hogenesch@cchmc.org
6. Prof Steven Pinker, PhD, Johnstone Family Professor of Psychology, Harvard University; e-mail: pinker@wjh.harvard.edu

IX. BIOGRAPHY

With “nothing human being foreign,” Charleen's scientific interests are broad and include a range of fields and methodologies (e.g., bioinformatics, linguistics, epidemiology, ethics, genetics). She's both a coder (R and Linux) and a writer. Her dissertation on DNA methylation in shift workers included an ethical argument to protect those who work at night. She subsequently trained in Mendelian randomization, which uses genetics to understand the environment. She is currently focused on ribosomal proteins and has on-going collaborations with colleagues in psychology.

Some history: After obtaining a master's degree in applied linguistics (using language to solve social problems), she served as an interfaith chaplain at Columbia Presbyterian Hospital in 2003 (she's culturally Jewish and an atheist). The suffering of her patients changed the direction of her life. Serving as the chaplain for oncology and neonatal intensive-care units moved her into genetics and prevention science in her 30s. But the transition took time. She practiced meditation for three years—as a monastic—at San Francisco Zen Center.

In 2007, she learned medical genetics and public health on the job at the State of Washington's Newborn Screening Program, a position she landed due to curiosity, a deep desire to contribute meaningfully and empirically to society, and training in linguistics. Her role was in risk-communication for life-threatening genetic conditions: she called doctors and explained genetic results for rare metabolic disorders.

Charleen has since gained scientific expertise at some of the best public-health departments in the world: Johns Hopkins School of Public Health, University of Washington's Public-Health Genetics Institute, University of Bristol's Integrative Epidemiology Unit, and Harvard T.H. Chan School of Public Health. Likewise, she has worked at three world-renowned cancer research and treatment centers: the National Cancer Institute, the Fred Hutchinson Cancer Research Center, and the City of Hope National Medical Center.

She is committed to science communication and uses her training in linguistics to reach the public. Here are a few examples: An ethics soundbite from her dissertation on circadian biology made it into *Nature*. She was interviewed by *National Public Radio (NPR)* for her essay (at *Genes to Genomes*) against using forensic genetics for racial profiling at the US-Mexico border. She wrote a letter to the Linguistic Society of America against illiberal attempts by their members to punish those with heterodox views. For this, she was quoted in the *Atlantic*. After Trump refused to concede the 2020 presidential election, she performed a statistical analysis of the US 2020 voting data and found no evidence of fraud. Her research on the matter was used by *FactCheck.org* to protect democracy, dispelling voting count misinformation. To honor the memory of a young man who died, she did a podcast on the genetic and environmental causes of testicular germ cell tumors.

She has 32 publications, including 18 first-author scientific manuscripts, four collaborative (genetics and molecular epidemiology) papers, and 10 essays for the public.