

# Gibran Hemani

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## Academic Qualifications

### University of Edinburgh

PHD IN QUANTITATIVE GENETICS

- Genetics Society 'Best PhD thesis in population and quantitative genetics' 2011

Edinburgh

Oct-07 to Aug-11

### University of Nottingham

BSC (HONS) 2:1

Nottingham

Sep-03 to Jun-06

## Employment

### MRC Integrative Epidemiology Unit, University of Bristol

ASSOCIATE PROFESSOR 2021, SENIOR RESEARCH FELLOW 2018, RESEARCH FELLOW 2014

UK

Jan-14 to present

### Queensland Brain Institute, University of Queensland

POST DOCTORAL STATISTICAL GENETICIST

Australia

Jan-12 to Dec-13

## Publications

Selected publications organised by category are listed below. Full publication list on google scholar. H-index: **53**

### Academic journal papers (refereed)

1. L Min, J., Hemani, G., Hannon, E., F Dekkers, K. & Castillo-Fernandez, J. *et al.* Genomic and phenotypic insights from an atlas of genetic effects on dna methylation. *Nature genetics* (2021) [joint first].
2. S Lyon, M., J Andrews, S., Elsworth, B., R Gaunt, T., Hemani, G. & Marcora, E. The variant call format provides efficient and robust storage of gwas summary statistics. *Genome biology* (2021) [joint last].
3. J Griffith, G., T Morris, T., J Tudball, M., Herbert, A. & Mancano, G. *et al.* Collider bias undermines our understanding of covid-19 disease risk and severity. *Nature communications* (2020) [NA].
4. Brumpton, B., Sanderson, E., Heilbron, K., Pires Hartwig, F. & Harrison, S. *et al.* Avoiding dynastic, assortative mating, and population stratification biases in mendelian randomization through within-family analyses. *Nature communications* (2020) [joint last].
5. Zheng, J., Haberland, V., Baird, D., Walker, V. & C Haycock, P. *et al.* Phenome-wide mendelian randomization mapping the influence of the plasma proteome on complex diseases. *Nature genetics* (2020) [joint last].
6. L Anderson, E., D Howe, L., H Wade, K., Ben-Shlomo, Y. & David Hill, W. *et al.* Education, intelligence and alzheimer's disease: Evidence from a multivariable two-sample mendelian randomization study. *International journal of epidemiology* (2020) [last author].
7. Cho, Y., C Haycock, P., Sanderson, E., R Gaunt, T. & Zheng, J. *et al.* Exploiting horizontal pleiotropy to search for causal pathways within a mendelian randomization framework. *Nature communications* (2020) [last author].
8. Hemani, G., Zheng, J., Elsworth, B., H Wade, K. & Haberland, V. *et al.* The mr-base platform supports systematic causal inference across the human phenome. *elife* (2018) [NA].
9. G Richardson, T., C Haycock, P., Zheng, J., J Timpson, N. & R Gaunt, T. *et al.* Systematic mendelian randomization framework elucidates hundreds of cpg sites which may mediate the influence of genetic variants on disease. *Human molecular genetics* (2018) [NA].
10. Hemani, G., Tilling, K. & Davey Smith, G. Orienting the causal relationship between imprecisely measured traits using gwas summary data. *PLoS genetics* (2017) [NA].

11. G Richardson, T., Zheng, J., Davey Smith, G., J Timpson, N., R Gaunt, T., L Relton, C. & Hemani, G. Mendelian randomization analysis identifies cpg sites as putative mediators for genetic influences on cardiovascular disease risk. *The American Journal of Human Genetics* (2017) [NA].
12. R Gaunt, T., A Shihab, H., Hemani, G., L Min, J. & Woodward, G. *et al.* Systematic identification of genetic influences on methylation across the human life course. *Genome biology* (2016) [joint first].
13. Hemani, G., Knott, S. & Haley, C. An evolutionary perspective on epistasis and the missing heritability. *PLoS genetics* (2013) [NA].
14. Hemani, G., Yang, J., Vinkhuyzen, A., E Powell, J. & Willemsen, G. *et al.* Inference of the genetic architecture underlying bmi and height with the use of 20,240 sibling pairs. *The American Journal of Human Genetics* (2013) [NA].
15. Hemani, G., Theocharidis, A., Wei, W. & Haley, C. EpiGPU: Exhaustive pairwise epistasis scans parallelized on consumer level graphics cards. *Bioinformatics* (2011) [NA].

## Review articles

1. Davey Smith, G. & Hemani, G. Mendelian randomization: Genetic anchors for causal inference in epidemiological studies. *Human molecular genetics* (2014) [NA].
2. Wei, W.-H., Hemani, G. & S Haley, C. Detecting epistasis in human complex traits. *Nature Reviews Genetics* (2014) [NA].

## Research grants

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### Genetic architecture of Huntington's disease progression (Contracts pending)

CURE HUNTINGTON'S DISEASE INITIATIVE

2020

- Amount: 598,881 GBP ; Role: PI ; Dates: 2021-01-01 to 2022-12-31 ; Proportion: 10%

### Aetiological Epidemiology

BIOGEN

2020

- Amount: 284,525 GBP ; Role: Co-I ; Dates: 2020-09-01 to 2022-08-31 ; Proportion: 5%

### The causal map of the human phenome

WELLCOME TRUST AND ROYAL SOCIETY, SIR HENRY DALE FELLOWSHIP

2017

- Amount: 1,356,578 GBP ; Role: PI ; Dates: 2018-01-04 to 2023-06-30 ; Proportion: 100%

### Classifying mechanisms of pleiotropy to improve causal modelling

BBSRC AND GLAXOSMITHKLINE, CASE STUDENTSHIP

2017

- Amount: 100,000 GBP ; Role: PI ; Dates: 2017-10-01 to 2021-09-30 ; Proportion: 5%

### Pathways to self-harm: Biological mechanisms and genetic contribution

MEDICAL RESEARCH COUNCIL AND MEDICAL RESEARCH FOUNDATION

2017

- Amount: 372,334 GBP ; Role: Co-I ; Dates: 2017-10-01 to 2019-10-01 ; Proportion: 5%

### Identification of Traits and Biomarkers for Prediction of Huntington's Disease

#### Phenotypes using Novel causal analysis Methodologies

CURE HUNTINGTON'S DISEASE INITIATIVE

2017

- Amount: 117,059 GBP ; Role: Co-I ; Dates: 2017-04-01 to 2019-03-31 ; Proportion: 10%

### Translation of MR for drug target identification

GLAXOSMITHKLINE

2017

- Amount: 349,099 GBP ; Role: Co-I ; Dates: 2017-01-01 to 2020-01-01 ; Proportion: 5%

### Translation of MR for drug target identification

BIOGEN

2017

- Amount: 436,165 USD ; Role: Co-I ; Dates: 2017-01-01 to 2020-01-01 ; Proportion: 5%

### Dissecting genetic interactions in gene expression

UNIVERSITY OF QUEENSLAND, EARLY CAREER RESEARCH GRANT

2013

- Amount: 34,000 AUD ; Role: PI ; Dates: 2013-01-01 to 2013-12-31 ; Proportion: 2%

### Dissecting genetic interactions in complex traits

CASE STUDENTSHIP, BBSRC AND MONSANTO

2007

- Amount: 100,000 GBP ; Role: PI ; Dates: 2007-09-01 to 2011-08-30 ; Proportion: 100%