

6th Mendelian randomization conference, 2024

Location: Humanities, 11 Woodland Road, Clifton, Bristol, BS8 1TB

Full programme

Tuesday 18 June – Intermediate Mendelian randomization course (by separate registration)

Location: Lecture Theatre		
TIME	EVENT	TUTOR
9.00	Arrival and coffee	
9.30	Welcome, recap of MR and history and discussion of terminology	Kaitlin Wade
10.00	Multi-ancestry MR	Gib Hemani
10.45 Break and discussion - Foyer		
11.15	Multivariable MR for mediation and/or time-varying analyses	Eleanor Sanderson
12.15 Lunch - provided for all in Foyer		
13.15	Analyses with single SNPs / drug targets / molecular MR	Kaitlin Wade
14.00	Selection bias for progression / treatment	Apostolis Gkatzionis
14.45 Break and discussion - Foyer		
15.15	Stratified and non-linear MR	Kaitlin Wade
15.45	Within-family MR	Eleanor Sanderson
16.15 to 17.00	Q&A + Panel discussion	Kaitlin, Eleanor, Apostolis

Wednesday 19 June

TIME	EVENT	LENGTH
Location: Lecture Theatre		
9.30	Welcome and opening of the conference Professor Deborah Lawlor, Acting Director of the MRC Integrative Epidemiology Unit at the University of Bristol	10 min
Session One: Developments and priorities for MR chaired by Deborah Lawlor, University of Bristol		
9.40	Jean Morrison, University of Michigan. <i>An efficient method for network Mendelian randomization allows network structure discovery and effect estimation</i>	30 min
10.10	Sonia Ning Tang, Imperial College London. <i>Graph Mendelian randomisation: a novel approach for causal graph inference to decode the causes of diseases and complex traits</i>	15 min
10.25	Leona Knüsel, University of Lausanne. <i>Widespread environment-specific causal effects detected in the UK Biobank</i>	15 min
10.40	Eleanor Sanderson, University of Bristol. <i>Bias from heritable confounding in Mendelian randomization studies</i>	15 min
Break - Foyer		

Session Two: Standards in MR chaired by David Evans, University of Queensland

Location: Lecture Theatre

11.30	Gibran Hemani, University of Bristol. <i>The OpenMR project</i>	30 min
12.00	Stephen Burgess, University of Cambridge. <i>Addressing the credibility crisis in Mendelian randomization</i>	15 min
12.15	Amy Mason, University of Cambridge. <i>What makes a good life: using theatrical performance to enhance communication about genetic research in patient and public involvement</i>	15 min
12.30	Launch of the Data Challenge Chin Yang Shapland, University of Bristol	15 min

Lunch - provided for all in Foyer

Session Three: Disease progression chaired by Philip Haycock, University of Bristol

Location: Lecture Theatre

13.45	Frank Dudbridge, University of Leicester. <i>Index event bias in MR of disease progression</i>	30 min
14.15	Resham Gurung, Khoo Teck Puat Hospital. <i>Plasma proteomics of diabetic kidney disease among Asians with younger-onset type 2 diabetes</i>	15 min
14.30	Apostolos Gkatzionis, University of Bristol. <i>Mendelian randomization studies where both the exposure and the outcome are disease progression traits</i>	15 min
14.45	Tessa Bate, University of Bristol. <i>Investigating the association between genetically proxied immune checkpoint protein inhibition and cancer survival using Mendelian randomisation</i>	15 min

Session Four: Mental health chaired by Golam Khandaker (co-chair Christina Dardani), University of Bristol

Location: Seminar Room G.H04

13.45	Michel Nivard, University of Bristol. <i>More than MR: model building through triangulation in the social sciences, psychology and psychiatry</i>	30 min
14.15	Rada Veeneman, University of Amsterdam. <i>The role of sex hormones in severe mental illness: a genetic exploration</i>	15 min
14.30	Robyn Wootton, University of Bristol/Lovisenberg Hospital. <i>Combining Mendelian randomisation with depression trajectories to identify developmentally specific predictors of change in depressive symptoms</i>	15 min
14.45	Chloe Slaney, University of Bristol. <i>Role of inflammation in depressive and anxiety disorders, affect, and cognition: genetic and non-genetic findings in the LifeLines Cohort Study</i>	15 min

Session Five: MR with Lifecourse data chaired by Nic Timpson, University of Bristol

Location: Cinema Room G.H01

13.45	David Evans, University of Queensland. <i>Modelling indirect effects in Mendelian randomization studies</i>	15 min
14.00	Tom Bond, University of Bristol. <i>Testing whether birth weight causes cardiometabolic risk factors via two sample Mendelian randomization</i>	15 min
14.15	Grace Power, University of Bristol. <i>A structural mean modelling Mendelian randomization approach to investigate the lifecourse effect of adiposity: applied and methodological considerations</i>	15 min
14.30	Genevieve Leyden, University of Bristol. <i>An evaluation of age-varying genetic effects underlying body mass index and blood pressure in the UK Biobank</i>	15 min
14.45	Maria Fernanda Vinueza Veloz, University of Oslo. <i>Estimating maternal and paternal effects of educational attainment on offspring</i>	15 min

cardiovascular disease risk factors: an intergenerational Mendelian randomization study

Break - Foyer

Session Six: Cancer chaired by Genevieve Leyden

Location: Lecture Theatre

15.30	Karl Smith-Byrne, University of Oxford on behalf of Olink. <i>The proteome and cancer risk: from discovery to prevention</i>	30 min
16.00	Karine Alcala, International Agency for Research on Cancer. <i>Obesity and renal cancer – a systematic evaluation of potential mediators</i>	15 min
16.15	Emma Hazelwood, University of Bristol. <i>Understanding the obesity-colorectal cancer relationship using multi-disciplinary approaches</i>	15 min
16:30	Marina Vabistevits, University of Exeter. <i>Mammographic density mediates the protective effect of early-life body size on breast cancer risk</i>	15 min
16:45	Laia Peruchet-Noray, International Agency for Research on Cancer (IARC/WHO). <i>Body shape phenotypes and risk of six obesity-related cancers: a Mendelian randomization study</i>	15 min

Session Seven: MR methods chaired by Stephen Burgess, University of Cambridge

Location: Seminar Room G.H04

15.30	Marc-André Legault, McGill University. <i>A novel machine learning Mendelian randomization estimator applied for drug target MR of sclerostin inhibition</i>	15 min
15.45	Andrew Grant, University of Sydney. <i>A Bayesian approach to Mendelian randomization using summary statistics with correlated pleiotropy</i>	15 min
16.00	Charlotte Fawcett, University of Leicester. <i>Comparing data-driven and biologically-driven approaches to clustering Mendelian randomization instruments</i>	15 min
16.15	Mihaela Diana Zanoaga, University of Lausanne. <i>Non-linear Mendelian randomization to detect stabilising selection for molecular traits</i>	15 min
16.30	Tianyuan Lu, University of Toronto. <i>Illustrating pervasive bias in Mendelian randomization with polygenic exposures through core gene hypothesis-based sensitivity analyses</i>	15 min

Session Eight: Infection chaired by Fergus Hamilton, University of Bristol

Location: Cinema Room G.H01

15.30	John Muriuki, KEMRI. <i>Iron in malaria and invasive bacterial infections</i>	30 min
16.00	Benedita Deslandes, University of Bristol. <i>A transcriptome-wide Mendelian randomization study assessing the causal role of CD4+ T cell gene expression profiles in colorectal cancer development</i>	15 min
16.15	Huiling Zhao, University of Bristol. <i>Application of immune cell eQTL MR analysis by integrating GWAS and expression</i>	15 min

Session Nine: Poster session

Location: Foyer and Gallery

16.45	Poster session 1	60 min (continues into reception)
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Informal social reception

Location: Foyer and Gallery

18.00 to 20.00 All delegates are invited to an informal evening held at the venue. A light meal and selection of drinks will be served in the grounds.

Thursday 20 June

TIME	EVENT	LENGTH
Session Ten: Keynote lecture chaired by Lavinia Paternoster, University of Bristol		
Location: Lecture Theatre		
9.00	Verena Zuber, Imperial College London. <i>Multivariable and multiresponse Mendelian randomization: Using genetic evidence to select causes of multi-morbidity</i>	60 min
10.00	Cunhao Liu, University of Cambridge. <i>Investigating selection bias in linear and non-linear Mendelian randomisation analyses</i>	15 min
10.15	Alice Carter, Novo Nordisk Research Centre Oxford. <i>Evaluating cardiometabolic risk factors and treatment efficacy in diverse British ancestries: Insights from drug target Mendelian randomization</i>	15 min
10.30	Yaxin Luo, University of Bristol. <i>Assessing selection bias of the relationship between body mass index, education, and C-reactive protein with depression symptoms: observational and one-sample Mendelian randomization study in UK Biobank</i>	15 min
Break - Foyer		
Session Eleven: Molecular traits chaired by Kaitlin Wade, University of Bristol		
Location: Lecture Theatre		
11.30	Zoltan Kutalik, University of Lausanne. <i>Mendelian randomisation with molecular exposures</i>	30 min
12.00	Allison Domingues, International Agency for Research on Cancer. <i>Regular use of pharmaceutical opioids and cancer risk: a multivariable Mendelian randomization analysis</i>	15 min
12.15	Chisom Soremekun, Makerere University. <i>Transethnic Mendelian randomization of hematological traits and type 2 diabetes mellitus</i>	15 min
12.30	Luca Pestarino, Cancer Registry of Norway. <i>A Mendelian randomization approach for pre-diagnosis miRNA signatures in endometrial cancer causality</i>	15 min
Lunch - provided for all in Foyer		
Session Twelve: Posters		
Location: Foyer and Gallery		
13.45	Poster session 2	60 min
14.45 Break - Foyer		
Session Thirteen: MR methods chaired by Apostolos Gkatzionis, University of Bristol		
Location: Lecture Theatre		
15.15	Justo Lorenzo Bermejo, Heidelberg University. <i>Benchmarking of novel robust Mendelian randomization methods using down-sampling</i>	15 min
15.30	Amanda Forde, University of Galway. <i>MR-SimSS: Simulated Sample Splitting. A method to eliminate the effect of winner's curse in two-sample Mendelian randomization</i>	15 min
15.45	Ashish Patel, University of Cambridge. Presented by Stephen Burgess. <i>A frequentist test of proportional colocalization after selecting relevant genetic variants</i>	15 min
16.00	Ville Karhunen, University of Cambridge. <i>Assessing the suitability of commonly used Mendelian randomization sensitivity analysis methods for cis-Mendelian randomization</i>	15 min
16.15	Janne Pott, University of Cambridge. <i>Mendelian randomization with longitudinal exposure data of growth - simulation study and real data application</i>	15 min

Session Fourteen: Drug target MR chaired by Liv Tybjærg Nordestgaard, University of Bristol**Location: Seminar Room G.H04**

15.15	Anne Tybjærg Hansen, Copenhagen University Hospital. <i>Drug target MR in dyslipidemia</i>	30 min
15.45	Abdoulaye Diawara, University of Sciences, Techniques and Technologies of Bamako. <i>Genetically proxied therapeutic inhibition of kidney function drug targets and type 2 diabetes in Africans: A Mendelian randomization study</i>	15 min
16.00	Dipender Gill, Imperial College London. <i>Optimisation of instrument selection strategies for drug target Mendelian</i>	15 min
16.15	Qian Yang, University of Bristol. <i>Exploring the impact of thyroid function and antithyroid drugs on pregnancy complications: a Mendelian randomization approach</i>	15 min
16.30	Lucy Goudswaard, University of Bristol. <i>Dissecting the contribution of circulating proteins to multiple myeloma risk: a Mendelian randomization study</i>	15 min
16.45	Jie Zheng, Shanghai Jiaotong University School of Medicine. <i>The association of GLP1R bioactivities with the risk of self-harm behaviours: a population-based study applying Mendelian randomization principles</i>	15 min

Session Fifteen: Molecular traits chaired by Zoltan Kutalik, University of Lausanne**Location: Cinema Room G.H01**

15.15	Denis Baird, Biogen. <i>Employing molecular trait Mendelian randomization to identify drug targets in the early stages of drug discovery</i>	30 min
15.45	Luke Jostins-Dean, Nightingale Health UK. <i>Genetic and metabolomic profiling of the full UK Biobank</i>	30 min
16.15	Lisa Hobson, University of Bristol. <i>Using human genetic data to identify circulating protein level changes that are the causal consequence of cancer processes</i>	15 min
16.30	Fernanda Morales Berstein, University of Bristol. <i>Reassessing the link between body mass index and head and neck cancer: a Mendelian randomization study</i>	15 min

Session Sixteen: Public engagement and involvement session led by Amy Campbell and Siân Harris, University of Bristol**Location: Foyer and Gallery**

17.00	Public engagement and involvement session	120 min
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Canape reception**Location: Foyer and Gallery**

17.15 to 18.30 All delegates and members of the public attending the earlier session are invited to a canape reception, where nibbles and a selection of soft drinks will be served.

Friday 21 June

TIME	EVENT	LENGTH
Session Seventeen: Data challenge led by Chin Yang Shapland, University of Bristol		
Location: Lecture Theatre		
9.00	Introduction and overview of the challenge	10 min
9.10	Series of challenge presentations	80 min
10.30	Wrap up	10 min
Break - Foyer		

Session Eighteen: Ancestry and MR in non-European populations chaired by Sarah Atkinson, Kenya**Medical Research Institute****Location: Lecture Theatre**

11.00	Sophie Eastwood, University College London, <i>Population differences in cardiometabolic disease: a challenge to Eurocentric MR</i>	30 min
11.30	Daniel Lawson, University of Bristol. <i>Local ancestry and population structure in Biobanks - methods and implications</i>	15 min
11.45	Cameron Nicholls, University of Bristol. <i>Exploring challenges of Mendelian randomization in admixed populations</i>	15 min
12.00	Aimee Hanson, University of Bristol. <i>Assessing the challenges and opportunities of rare variant genetic instruments</i>	15 min
12.15	Christopher Kintu, Makerere University. <i>The causal effects of lipids on kidney function in Africans: bidirectional and multivariable Mendelian randomization study</i>	15 min
12.30	Award of prizes and final announcements Professor Chrissie Thirlwell, Head of Bristol Medical School, University of Bristol	

Close of conference

All delegates invited to take lunch in the foyer and remain for informal discussions
