

**Health Data Science
11-12 June 2019**

**Wellcome Genome Campus,
Hinxton, Cambridge, UK**

Conference Programme

Tuesday, 11 June 2019

09:00 - 10:00 **Registration**

10:00 - 10:10 **Welcome and Introduction**
Programme Committee: Caroline Relton, University of Bristol, UK

10:10 - 11:10 **Keynote Lecture**
Chair: Caroline Relton, University of Bristol, UK

Health Data Research UK (HDR UK): A national institute for health data science
Andrew Morris
Health Data Research, UK

11:10 - 12:40 **Session I: Computational medicine**
Chair: John Danesh, University of Cambridge, UK

11:10 Using the EHR for research and intervention and enriching the clinical
phenotype through smartphones and wearables
Richard Dobson
King's College London, UK

11:40 Large-scale correction of faulty diagnoses in population-wide Danish registry
data
Isabella Friis Joergensen
Novo Nordisk Foundation Center for Protein Research, Denmark

12:10 Mining health and healthcare utilization patterns during pregnancy to
discover risk factors for postpartum depression
Jyotishman Pathak
Weill Cornell Medicine, USA

12:25 Validating the identification of neurological diseases in UK Biobank
Kristiina Rannikmae
University of Edinburgh, UK

12:40 - 14:00

Lunch

14:00 - 15:30

Session 2: Precision medicine

Chair: Cathie Sudlow, University of Edinburgh, UK

14:00 Characterization of inpatient trajectories and analysis of missingness patterns from Electronic Health Records data
Maria Herrero Zazo
EMBL-EBI, UK

14:15 Implementing genomic medicine in the US and globally
Teri Manolio
Division of Genomic Medicine NHGRI, USA

14:45 Understanding genetic effects on gene expression in health and disease
Sarah Kim-Hellmuth
New York Genome Center, USA

15:15 Validation of a machine learning algorithm for diagnosing type I myocardial infarction on a population-scale dataset
Dimitrios Doudesis
University of Edinburgh, UK

15:30 - 16:00

Afternoon Tea

16:00 - 17:30

Session 3: Integrating multi-omics into health research

Chair: Teri Manolio, Division of Genomic Medicine NHGRI, USA

16:00 Regulation of the plasma proteome by polygenic disease risk
Michael Inouye
University of Cambridge, UK

16:30 (Gen)-omics of obesity
Cecilia Lindgren
Li Ka Shing Centre - BDI, UK

17:00 A transcriptome-wide Mendelian randomization study to uncover tissue-dependent regulatory mechanisms across the human phenome
Tom Richardson
MRC Integrative Epidemiology Unit, UK

17:15 Common genetic variation influences the probability that new-born babies are classified as clinically small or large for gestational age
Robin Beaumont
University of Exeter, UK

17:30 - 18:00 **Lightning Talks**
Chair: John Danesh, University of Cambridge, UK

18:00 - 19:30 **Poster Session with Drinks Reception**

19:30 **Conference Dinner**

Wednesday, 12 June 2019

09:00 - 10:30 **Session 4: Molecular epidemiology and population health**

Chair: Caroline Relton, University of Bristol, UK

09:00 Polygenic risk scores and potential clinical applications

Brent Richards

McGill University, Canada

09:30 Taking genomics into the clinic: whole-genome sequencing of 13,000 rare disease patients in a national healthcare system

Chris Penkett

NIHR BioResource, UK

10:00 Antenatal exposure to ultraviolet B radiation and learning disabilities: population cohort study of 422,512 children

Claire Hastie

University of Glasgow, UK

10:15 A comparison of stroke in urban and rural populations: exploring stroke risk and survival in Lancashire

Fran Biggin

Lancaster University, UK

10:30 - 11:00 **Morning Coffee**

11:00 - 12:00 **Session 5: Platform and technologies for health data science**

Chair: Michael Inouye, University of Cambridge, UK

11:00 A novel unsupervised approach to biomedical named entity recognition and linking using neural networks

Zeljko Kraljevic

King's College London, UK

11:15 Creating knowledge graphs from literature to enable prioritisation of potential drug targets

Joseph Mullen

SciBite Ltd, UK

11:30 The accelerating medicines partnership type 2 diabetes knowledge portal

Aravind Sankar

European Bioinformatics Institute (EMBL-EBI), UK

11:45 Using Privacy Enhancing Technologies (PETs) to integrate clinical phenotypes, routine healthcare data and genomics in the public cloud
Neil Walker
NIHR BioResource, UK

12:00 - 13:30

Lunch

13:30 - 15:00

Session 6: Digital health

Chair: Richard Dobson, King's College London, UK

13:30 Creating operating systems for biomedical discovery and care
Calum MacRea
Harvard Medical School, USA

14:00 Refining national approaches to low value care
Aoife Molloy
Imperial College London, UK

14:15 Using wearable devices and genetics to estimate and validate mechanisms of sleep
Andrew Wood
University of Exeter, UK

14:30 Towards a self-learning healthcare system
Tianxi Cai
Harvard University, USA

15.00 - 15:10

Closing Remarks

Programme Committee: Cathie Sudlow, University of Edinburgh, UK

15.10 - 15:30

Take Away Refreshments

15:30

Coaches depart to Cambridge City Centre and Train Station, and Heathrow Airport via Stansted Airport