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 1: 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 1 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*  
*NHHR 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