

Oxford Metabolic Health Symposium

Friday 1 July 2022

Medical Sciences Teaching Centre, South Parks Road Oxford, OX1 3PL

08:45 – 09:00 Registration (tea and coffee available)

09:00 – 09:10 Welcome & introduction from Professor John Todd (Wellcome Centre for Human Genetics)

09.10 – 10.40 Session 1. Chair: Professor John Todd

09:10 – 10:00 **KEYNOTE LECTURE** from Professor Claudia Langenberg (Berlin Institute of Health & University of Cambridge). *'From molecules to medical records – how can -omics advance our understanding and management of metabolic diseases?'*

10:00 – 10:20 Dr Elizabeth Haythorne (Department of Physiology, Anatomy and Genetics, DPAG) *'Altered glycolysis triggers impaired mitochondrial metabolism and mTORC1 activation in diabetic β -cells'*

10:20 – 10:30 Short talk (1) – Dr Sevasti Zervou (Cardiovascular Medicine-RDM). *'Is there crosstalk between creatine and homoarginine in mouse tissues?'*

10:30 – 10:40 Short talk (2) – Mohammad Ali (Tropical Medicine-NDM). *'The impact of type 2 diabetes mellitus and obesity on the antibody, B-cell and T-cell responses to SARS-CoV-2 following COVID-19 in Bangladesh.'*

10:40 – 11:10 Tea and coffee

11:10 – 12:15 Session 2. Chair: Dr Mariana Borsa (Kennedy Institute of Rheumatology)

11:10 – 11:30 Professor Leanne Hodson (Oxford Centre for Diabetes, Endocrinology & Metabolism, OCDEM-RDM)

'Liver fat and metabolic dysregulation: it is all about quantity?'

11:30 – 11:40 Short talk (3) - Kaitlyn Dennis (DPAG). *'Selective palmitoylation of CD36 is associated with metabolic dysfunction in the type 2 diabetic heart.'*

11:40 – 11:50 Short talk (4) – Dr Jun Liu (Nuffield Department of Population Health, NDPH). *'Investigation of the plasma proteome to identify drug targets for non-alcoholic fatty liver disease and metabolic dysfunction-associated fatty liver disease'*

11:50 – 12:10 Professor Benoit Kornmann (Department of Biochemistry)

'Monitoring inter-organelle lipid exchange in vivo'

12:10 – 12:15 Sponsor talk - Nick Howe, Agilent

12:15 – 13:15 LUNCH

13:15 – 14:35 Session 3. Chair: Dr Jason Torres (Big Data Institute and NDPH)

13:15 – 13:35 Professor Marella de Bruijn (Weatherall Institute for Molecular Medicine-RDM) *'The onset of circulation triggers a metabolic switch required for the endothelial to hematopoietic transition during embryonic development'*

13:35 – 13:45 Short talk (5) – Dr Nick Ciccone (OCDEM-RDM). *'Circadian control of hepatic heme metabolism in systemic inflammatory disease'*

13:45 – 13:55 Short talk (6) – Dr Anna Veprik (Novo Nordisk Research Centre Oxford). *'Towards genome-wide CRISPR screening to identify regulators of hepatic insulin signalling'*

13:55 – 14:15 Professor David Hodson (OCDEM-RDM)

'Understanding expression and signalling in GLP-1 and GIP receptors in the brain and periphery'

14:15 – 14:35 Dr Joanna Howson (Novo Nordisk Research Centre Oxford)

'Bringing human genetics to drug discovery and development'

14:35 – 14:40 Close – Professor David Ray (OCDEM-RDM)

Speakers' Biographies

Professor Claudia Langenberg

Claudia is Professor of Computational Medicine at the Berlin Institute of Health at Charité (BIH) and MRC Investigator and Programme Leader at the MRC Epidemiology Unit at the University of Cambridge. Her research is focused on the genetic basis of metabolic control, and her team studies its effects on health through integration of molecular with clinical data in large-scale patient and population-based studies. She completed her clinical training in Germany, following this with a Masters and PhD in epidemiology in the UK and the USA and specialist training in public health. In 2018 she received the Helmholtz International Fellow Award.

Dr Elizabeth Haythorne

Lizzie completed her PhD at the University of Dundee before moving on to postdoctoral positions at Imperial College London and at the University of Oxford. As a member of the Ashcroft group in DPAG, the overarching theme of her research has been to investigate how changes in blood glucose alter the metabolism and function of glucose sensing cells such as the pancreatic beta cell in health and disease.

Dr Sevasti Zervou

Sevasti moved to the Division of Cardiovascular Medicine in Oxford from the University of Warwick where she obtained her PhD and has a research background in endocrinology and diabetes. Since 2009 she has worked in the teams of Professors Neubauer and Lygate on cardiac energetics. Most recently, she has set out to investigate the role of creatine biosynthesis in pancreatic biology with colleagues from OCDEM. She is a Stipendiary Lecturer in Cellular Biochemistry at St. Peter's College.

Mohammad Ali

Ali is a third-year doctoral student with Professor Susie Dunachie at the Centre for Tropical Medicine and Global Health at the University. His studies focus on understanding the impact of type-2 diabetes and obesity on the immune responses to SARS-CoV-2 in COVID-19 patients from Bangladesh. He completed his postgraduate MD in Biochemistry and Molecular Biology in Dhaka, Bangladesh and was awarded the Prime Minister Fellowship Bangladesh in 2019 to undertake his DPhil at Oxford.

Professor Leanne Hodson

Leanne is Professor of Metabolic Health at OCDEM. She obtained her PhD from the University of Otago, New Zealand and moved to Oxford to work with Professors Frayn and Karpe. In 2011, she was awarded a British Heart Foundation (BHF) Intermediate Basic Science Research Fellowship and in 2015 received a BHF Senior Basic Science Research Fellowship which she successfully renewed in 2021.

Kaitlyn Dennis

Kaitlyn is a third year DPhil student in Cardiovascular Sciences (BHF) working with Professor Lisa Heather in DPAG. She is interested in understanding how altered lipid signaling observed in type 2 diabetes affects the heart.

Dr Jun Liu

Jun received her medical degree in China in 2013 and in 2019 completed her PhD thesis at the Erasmus Medical Centre in Rotterdam. Now in Oxford, she works mainly on integration of multi-omics in cardiometabolic diseases and related neurological disorders. In September 2021, she started her Novo Nordisk Research Fellowship working with Professor Cornelia van Duijn (NPDH) and Dr Joanna Howson (NNRCO).

Professor Benoit Kornmann

Benoit is Associate Professor at the Department of Biochemistry at Oxford and fellow of the St-Hugh's College. He studies membrane contact sites, how intracellular organization impinges on organelle function and how lipid molecules are distributed among the many membranes of a eukaryotic cell. Benoit gained his PhD at the University of Geneva and previously held positions of Assistant Professor at the ETH Zurich, Professor of the Swiss National Science Foundation, and fellow of the Swiss National Science Foundation.

Professor Marella de Bruijn

Marella is Professor of Developmental Haematopoiesis at the MRC Molecular Haematology Unit (MHU) at the Weatherall Institute of Medicine in Oxford. She obtained her PhD from Erasmus University in Rotterdam and followed this with a postdoctoral fellowship there and as a Fellow of the Dutch Cancer Society at Dartmouth Medical School in the USA. She moved to join the faculty at the MRC MHU in 2003 where her main research interest is the birth of blood stem and progenitor cells during embryonic development.

Dr Nick Ciccone

Nick completed his PhD at the University of Edinburgh and went on to become a postdoctoral fellow at Harvard Medical School. He returned to the UK where he was awarded a BBSRC Fellowship and is currently a member of the Ray group at OCDEM where he is exploring the interactions between inflammation, iron regulation and circadian rhythms.

Dr Anna Veprik

Anna is a post-doctoral research scientist in the Department of Discovery Biology and Pharmacology, Novo Nordisk Research Centre Oxford (NNRCO). As part of her interest in multi-organ pathophysiology of metabolic diseases, she is leading the development of high-throughput screening platforms for unbiased target identification around hepatic insulin sensitivity and resistance. Prior to joining NNRCO, Anna was a NN-Oxford research fellow at DPAG. She completed her PhD at the Weizmann Institute of Science in Israel.

Professor David Hodson

David is the Robert Turner Professor of Diabetic Medicine at the Oxford Centre for Diabetes, Endocrinology and Metabolism. Previously, he was Professor of Cellular Metabolism and Institute Deputy Director at the University of Birmingham. Originally a veterinary surgeon by training, David undertook postdoctoral studies at the CNRS, Montpellier, before establishing his independent laboratory at Imperial College London.

Dr Joanna Howson

Joanna is a Vice President & Head of Genetics at Novo Nordisk, based at the Research Centre in Oxford. She joined Novo Nordisk in 2019 after spending 19 years at the University of Cambridge, first training in statistical genetics and applications in autoimmune and infectious diseases before becoming a PI at the Cardiovascular Epidemiology Unit. She has led or co-led several international consortia to investigate the genetics underlying cardiovascular disease and its risk factors. She is now responsible for leveraging human genetics to identify and validate drug targets for cardiometabolic disease and to inform decision making across drug discovery and development at Novo Nordisk.

Chairs

Professor John Todd is Professor of Precision Medicine and Jeffrey Cheah Professorial Fellow. He is Director of the Wellcome Centre for Human Genetics (WHG) and of the JDRF/Wellcome Diabetes and Inflammation Laboratory at the Centre.

Dr Mariana Borsa is a Marie Skłodowska-Curie Actions Postdoctoral Fellow at the Kennedy Institute of Rheumatology where she investigates autophagy in immunity and haematopoiesis.

Dr Jason Torres is a Senior Genetic Epidemiologist at the Big Data Institute-NDPH where he leads genetic analyses of the Mexico City Prospective Study.

Oxford Metabolic Health (OMH)

OMH is an interdepartmental and cross-divisional initiative established in 2018 to bring together researchers from across the University and at nearby facilities who are interested in the relationship between metabolism (in the broad sense of the term) and health. The OMH network is open to Oxford-based researchers at any level of their career. To join the network and receive monthly newsletters, send an email to: omh_network-subscribe@maillist.ox.ac.uk

The OMH team is made up of:

John Todd is Professor of Precision Medicine and Jeffrey Cheah Professorial Fellow. He is Director of the Wellcome Centre for Human Genetics (WHG) and of the JDRF/Wellcome Diabetes and Inflammation Laboratory at the Centre.

David Ray is Professor of Endocrinology at OCDEM-RDM and leads a group investigating circadian clock control of inflammation and energy metabolism.

Lisa Heather is Associate Professor and a BHF Intermediate Fellow in DPAG. Her lab investigates the effects of accumulation of fat in the diabetic heart.

Jane Itzhaki is Research Facilitator of Oxford Metabolic Health (jane.itzhaki@medsci.ox.ac.uk)

With thanks to our sponsors Agilent and the Biochemical Society

