

MitOX 2024 April 12th

9.25 Karl Morten (Oxford) Welcome

Session 1. Mitochondrial Medicine: Chairs Karl Morten and Joanna Poulton (Oxford)

9.30 Daniel Missailidis (La Trobe): Mitochondrial abnormalities in cell lines from people with Myalgic Encephalomyelitis/Chronic Fatigue Syndrome

9.55 Claudia Spits (VUB): Children born after assisted reproduction more commonly carry a mitochondrial genotype associating with low birthweight
mtDNA genetics

10.20 Joanna Elson (University of Newcastle): Review of the use of a mitochondrial DNA (mtDNA) functional polygenic gene score (PGS) to investigate the role of mtDNA variation in complex traits: Beyond the haplogroup hypothesis. ST1

10.30 Chris Fearn (University of Portsmouth): Identifying and determining the prognostic significance of mitochondrial DNA aberrations including large-scale variants in primary glioblastoma using long-read sequencing. ST2

10.40 Lyuba Bozhilova (Oxford): The kimura R package for mtDNA heteroplasmy analysis. ST3

11.00 **Coffee**

Session 2. Mitochondria neurodegeneration and oxidative stress: Chair Alister Nunn (University of Westminster/Guy Foundation)

11.25 Ling Li (University of Minnesota): Impact of APOE genotype on mitochondrial function in primary and iPSC-derived brain cells – implications for Alzheimer's disease

11.50 Ilse Pienaar (University of Birmingham): Mitochondrial DNA maintenance failure in atrophying pontine neurons in Synucleinopathy Disorders

12.15 Marcos Castro-Guarda (Oxford) Unlocking alternative roles for the Krebs cycle: Fumarate as a mitochondrial signalling molecule regulating cardiomyocyte metabolism and antioxidant profile. ST4

12.30 **The Pollard lecture:** Chair Jo Poulton

Derek Narendra (NIH): Curbing mitochondrial dysfunction in neurodegeneration: lessons from neurogenetics.

13.00 **Lunch & Poster session**

Session 3. Mitochondria and Homeostasis: Chair Mariana Borsa (Oxford)

14.15 Dylan Ryan (University of Cambridge): Mitochondrial control of inflammatory macrophage function'

14.40 Glen Jeffery (UCL): Controlling human metabolism optically. The importance of the light bulb

15.05 Sally Clayton (Birmingham): Investigating the role of the NDUFA4 (COXFA4) family of electron transport chain proteins in inflammation. ST5

- 15.20 James Chettle (Oxford): LARP1 regulates macrophage mitochondrial metabolism and polarisation in the tumour immune microenvironment.ST6
- 15.35 Shiyu Bian (Imperial College): Investigating the impact of mitochondrial DNA variability on human pluripotent stem cell metabolic state and fitness.ST7
- 15.50 James Grist (Oxford): Introducing Hyperpolarized Magnetic Resonance Imaging: A translational technique to image real-time Mitochondrial Pyruvate DeHydrogenase flux. ST8
- 16.05 **Tea**
- Session 4. Mitochondria, heterogeneity and mitophagy:** Chair Tom Nicol (Oxford)
- 16.35 Jose Antonio Enriquez (CNIC Madrid): Role of complex IV heterogeneity in health and disease
- 17.05 Nick Ktistakis (University of Cambridge): Looking for novel autophagy targets in neurodegeneration
- 17.30 Xiao Liang (Oxford): Impaired mitophagy and mitochondrial function in Primary Cultured Fibroblasts with Parkin mutations.ST9
- 17.45 Jose R. Hombrebueno (University of Birmingham): Mitophagy inducer PA-01 alleviates premature aging hallmarks at the multisystem level in diabetes. ST10
- 18.00 **Drinks**

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