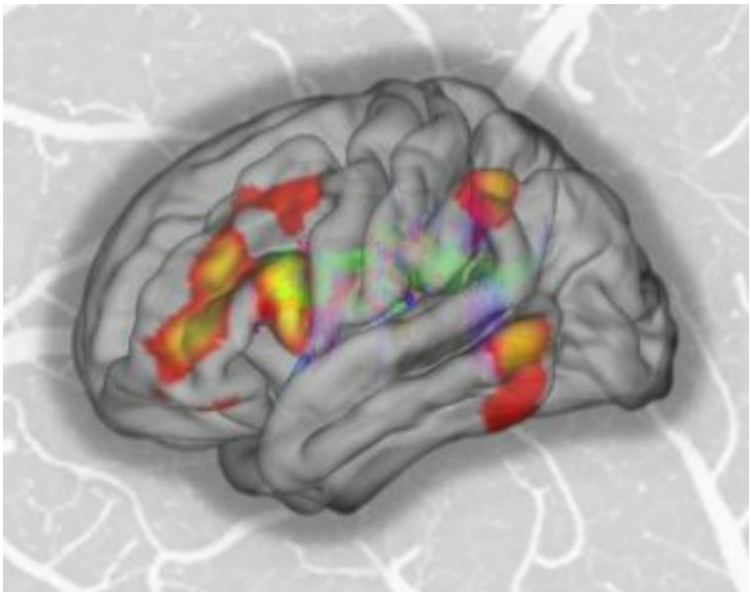
Programme

Interpreting BOLD III – a dialogue between cellular and cognitive neuroscience

31 August – 2 September 2022
Christ Church, Oxford, UK



Wednesday, 31 August 2022

14:00 Arrivals and check in
Porters Lodge

15:30 Welcome Reception - Fizz and croquet
Master's Garden

16:30 Poster Session I
Research Centre, Christ Church Meadow

19:00 Dinner
Hall

Thursday, 1 September 2022

07:30 Breakfast
Hall

Lecture Session I: **Overview of mechanisms underlying BOLD**
Michael Dummett Lecture Theatre

09:00 Anusha Mishra (Oregon Health & Science University, USA)
Astrocyte regulation of neurovascular coupling in health and disease

09:40 Clare Howarth (University of Sheffield, UK)
Interneurons, nitric oxide and cerebral blood flow


10:20 Selected Oral Abstract – Gabriella Rossetti (University of Reading, UK)
Investigating relationships between haemostatic function, vessel health, and neurovascular function: preliminary findings

10:35 Discussion

10:45 Coffee Break

Lecture Session II: **Functional connectivity**
Michael Dummett Lecture Theatre

11:15 Janine Bijsterbosch (Washington University in St. Louis, USA)
Individualized spatial organization of resting state BOLD networks

11:55 David Norris (Radboud University, The Netherlands)
Exploring brain connectivity in the language and visual networks

12:35 Discussion

12:45 Lunch
Hall

Lecture Session III: **Circuit predictions based on BOLD**
Michael Dummett Lecture Theatre

14:00 Charlie Stagg (University of Oxford, UK)
Multimodal MR Spectroscopic Imaging studies to probe the neurochemical basis of BOLD in humans

14:40 Serge Charpak (INSERM Paris, France)
The oxygen initial dip in the brain of anesthetized and awake mice

14:55 Prakash Kara (University of Minnesota, USA)
Using three-photon imaging to determine the neural basis of fMRI across cortical layers

15:20 Coffee Break

15:30 Richard Buxton (University of California San Diego, USA)
A thermodynamic hypothesis for coupling of blood flow and oxygen metabolism in the brain

16:10 Discussion

16:30 Poster Session II
Research Centre, Christ Church Meadow

19:00 Dinner and Networking Banquet
Hall

Friday, 2 September 2022

07:30 Breakfast
Hall

Lecture Session IV: **Advances in understanding the neurovascular coupling relationship**
Michael Dummett Lecture Theatre

9:00 Ravi Rungta (University of Montreal, Canada)
Multiscale spatial relationship between neuronal activity and neurovascular coupling

9:40 Albrecht Stroh (Johannes Gutenberg-University Mainz, Germany)
Beyond correlation: applying opto-magnetic physiology to unravel the mechanisms of cortical network function and dysfunction


10:20 Selected Oral Abstract: Rantamanjuri Devi (Max Plank Institute, Germany)
Assessing neuronal contributions in the BOLD response through non-BOLD fMRI

10:35 Discussion

10:45 Coffee Break

11:20 Catherine Hall (University of Sussex, UK)
Regional differences in neurovascular coupling and their implications for BOLD

12:00 Selected Oral Abstract: Davide Boido (Commissariat à l'Energie Atomique, France)
How good is BOLD fMRI at reporting neuronal activity?

12:15 Discussion

12:30 Lunch
Hall

Lecture Session V: **Neuromodulation and BOLD**
Michael Dummett Lecture Theatre

14:00 Valerio Zerbi (EPFL, Switzerland)
The economics of BOLD and the influence of Locus Coeruleus on network brain activity and dynamics

14:40 Selected Oral Abstract: Cam Ha Tran (University of Nevada Reno, USA)
Serotonin modulates sensory-induced functional hyperemia and astrocyte Ca^{2+} transient in awake, behaving mice

14:55 Selected Oral Abstract: Piergiorgio Salvan (University of Oxford, UK)
Serotonin regulation of behaviour via large-scale neuromodulation of serotonin receptor networks

15:10 Discussion

15:20 Coffee Break

15:50 **General discussion with an all-speakers panel and meeting outputs**

16:50 Closing remarks

17:00 Departure

Presentations selected from submitted abstracts are eligible for the "People's Choice" presentation award.

Organisers

Catherine Hall, Ph.D., University of Sussex
Clare Howarth, Ph.D., University of Sheffield
Anusha Mishra, Ph.D., Oregon Health & Science University
Alberto Lazari, Ph.D., University of Oxford

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