

BNA2015: Festival of Neuroscience (Edinburgh, 12th-5th April, 2015)

Meeting Report, 25th June 2015

Prof. Narender Ramnani, Programme Chair

Royal Holloway University of London

BNA2015: Festival of Neuroscience was held at the Edinburgh International Convention Centre. It was an honour for me to organise this meeting in the year that the BNA celebrates its 50th Anniversary, but its successes are largely due to the efforts of the outstanding speakers who contributed to events, delegates, the programme and abstract committees, and the Local Organising Committee. One of the key successes of the meeting was its organisation, and this was due to exceptional dedication and professionalism of Organising Team (please see Appendices).

Full BNA2015 programme information is archived on the BNA website, along with that of previous meetings: <https://www.bna.org.uk/neuroscience-meetings.html>

Partners and Sponsors

We were fortunate to be supported by about 90 organisations with a neuroscience interest, who supported us through the exhibition, sponsorship and donation. We are especially grateful to the Wellcome Trust (please see Appendices).

Key Highlights

- **Programme Committee:** This comprised **45 leading UK neuroscientists** from different disciplines in the field reviewed event proposals and contributed to shortlisting of Plenary Speakers (Appendix 1).
- **BNA 50th Anniversary Lecture & 2015 Wolstencroft Memorial Award Lecture,** Professor John O'Keefe (Nobel Laureate for Physiology or Medicine, 2014), University College London, London, UK, "The Journey to the Hippocampal Cognitive Map"
- **Plenary Lectures:** We are grateful to the following speakers.
 - **Professor Dame Kay Davies**, University of Oxford, UK (Chaired by Professor Peter Brophy, University of Edinburgh): "Role of oxidative stress in neurodegeneration"
 - **Professor Annette C Dolphin**, University College London, UK (Chaired by Dr John Isaac, Wellcome Trust): "Neuronal voltage-gated calcium channels: from channel trafficking to therapy for neuropathic pain"
 - **Professor Thomas M Jessell**, Columbia University, USA (Chaired by Professor Narender Ramnani, Royal Holloway University of London): "Strategies and circuits for motor control"
 - **Professor Richard G M Morris**, University of Edinburgh, UK (Chaired by Professor John Aggleton, Cardiff University): "The making, keeping and losing of memory"

- **Professor Giacomo Rizzolatti**, University of Parma, Italy (Chaired by Professor Trevor Robbins, University of Cambridge): “Understanding others: a neural mechanism”
 - **Professor Susumu Tonegawa**, Massachusetts Institute of Technology, USA; Nobel Laureate for Physiology or Medicine, 1987; (Chaired by Professor Russell Foster, University of Oxford): “Memory engram cells have come of age”
 - **Professor Lorraine Tyler**, University of Cambridge, UK (Chaired by Professor Dorothy Miell, University of Edinburgh): “From perception to conception: the evolution of meaning along the ventral stream”
- **Public Lectures (video available on BNA YouTube channel)**

The BNA was fortunate to have **Lord Robert Winston** and **Ben Thomson** chair Public Lectures presented by two internationally renowned neuroscientists at **BNA2015**. Both lectures were organised in conjunction with the [Edinburgh International Science Festival](#) and the [EICC's InnovationNation](#) initiative, and the BNA is very grateful for their support.

- **Public lecture 1** (Professor David Nutt)

Why Scotland Should Lead the Neuroscientific Enlightenment?

Controversial former UK Government advisor and former BNA president **Prof David Nutt** of Imperial College London, on the ways he believes a radical policy rethink could transform the classification of drugs and alcohol and their impact on society.

Watch here: <https://www.youtube.com/watch?v=EezgNZgZW-o&feature=youtu.be>

- **Public lecture 2** (Dr Adrian Owen)

The Search for Consciousness: detecting awareness in the vegetative state

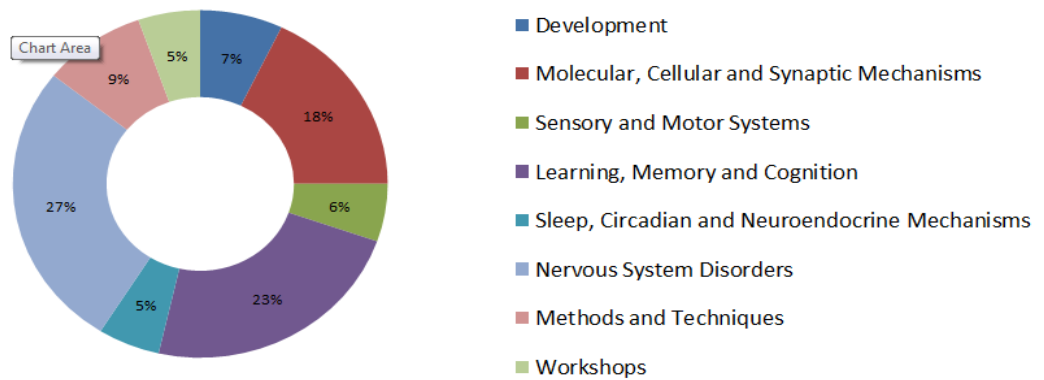
Hosted by **Prof Lord Robert Winston**, pioneering neuroscientist **Dr Adrian Owen** discusses how studies of coma, vegetative state and general anaesthesia are helping us to understand human consciousness and how it can be measured after serious brain injury.

Watch here: <https://www.youtube.com/watch?v=JeBkUtYvBBM&feature=youtu.be>

- **Symposia, Workshops and Special Events:**

Nearly **100 symposium and workshop proposals** were submitted by UK neuroscientists. This response to our call for proposals was unprecedented, and the quality of most of these proposals was extremely high. Timetable constraints allowed us to include about half of these events into the scientific programme. A further 7 Special Events were also included.

Symposia were organised into eight themes. The proportions of sessions allocated to each theme were broadly similar to those of BNA2013.





PROVISIONAL PROGRAMME

Symposia

- A** Development
- B** Molecular, Cellular and Synaptic Mechanisms
- C** Sensory and Motor Systems
- D** Learning, Memory and Cognition
- E** Sleep, Circadian and Neuroendocrine Mechanisms
- F** Nervous System Disorders
- G** Methods and Techniques
- S** Special Events

Sunday 11.30 - 13.30

- B** Brain cannabinoid system: a new therapeutic frontier in brain repair
- B** Fats are fitting for brain disease, but how do they work?
- D** The social life of voices
- F** The immune system and the brain
- F** The role of synapses in neurodegenerative diseases
- F** The utility of biomarkers in CNS drug development
- G** Intravital optical imaging: conventional to super-resolution

Sunday 16.00 - 18.00

- B** Learning from LTP
- D** Dynamics of brain responses to faces
- F** Brain repair: from fish to human
- F** Gene therapy for CNS disorders
- S** Challenges and progress from the first calls of the EU Innovative Medicines Initiative (16.00 – 19.00)
- S** Open Access: Panel Debate (Chair, Dr Philip Campbell, Editor-in-Chief, Nature)
- S** Fat and stressed out, always late, but still in love: A workshop in neuroendocrinology (16.00 – 19.00)
- S** The Human Brain Project: relevance to UK neuroscience

Monday 08.30 - 10.30

- A** The cell biology of neurogenesis
- B** Synaptopathy: the new field of synaptic medicine
- C** Closing the loop: brain-computer interfaces and neurofeedback
- D** Knowing where you are: circuit mechanisms for estimating location
- D** Reconsolidation, extinction, and the space in between
- E** Sleep, circadian rhythms and the neuroendocrine system
- S** Drugs: addiction and freewill: do addicted individuals have free will?

Monday 14.45 - 16.45

- B** Holding it together: membrane interactions underlying the health and well-being of neuronal cell biology
- D** Mind wandering, ADHD and the brain
- D** Psychedelic neuroscience – can understanding brain mechanisms guide new treatments?
- F** Human stem cell models of neurodegenerative disease
- F** The pedunculopontine nucleus – a new target for deep brain stimulation in Parkinson's disease
- S** Effective grantsmanship and funding opportunities
- S** Neuroimaging analysis methods (14.45 – 17.45)
- S** "Where did all the women go? Aspirations for senior neuroscience leaders" (Prof Jackie Hunter, Chief Executive, BBSRC)

Tuesday 08.30 - 10.30

- A** What can cognitive neuroscience tell us about development
- B** Modelling human disease in a dish: implications for understanding neurodegeneration and for development of novel therapies
- C** Neuroimaging and quantitative sensory testing: a new approach to translational pain studies in humans
- D** Frontal lobe mechanisms of behavioural change
- D** Sex differences in synaptic plasticity and memory
- F** Cannabinoids in psychiatric neuroscience: medicine or menace?
- F** Normal ageing: Alzheimer's disease risk factor number one

Tuesday 14.45 - 16.45

- B** Cholinergic neuromodulation in the CNS: from single cells to networks
- B** Molecular mechanisms of neurodegeneration and regeneration
- D** Neural mechanisms underlying emotion regulation and dysregulation
- F** Mechanisms of reward-seeking
- F** Metabolic and vascular contributors to dementia
- F** The neuroimmunology of stroke: inflammation, immunosuppression, infection and injury
- G** Beyond BOLD: advances in quantitative functional and metabolic imaging

Wednesday 08.30 - 10.30

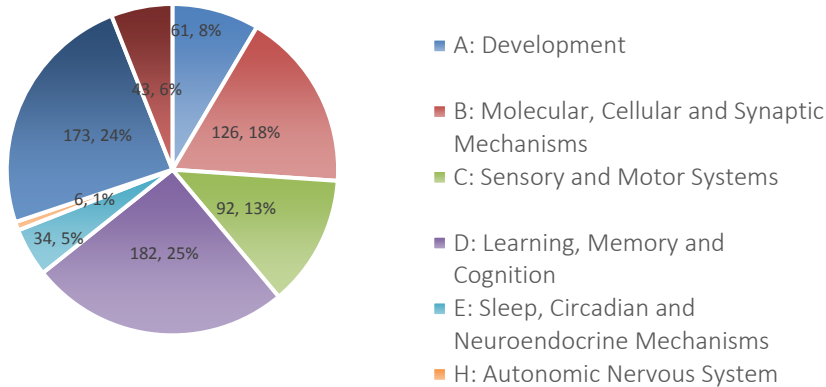
- A** Molecular mechanisms of neurodevelopment and links to later-life neurological disorders
- B** Microglia and neuronal function
- D** Memory consolidation: an interdisciplinary approach
- E** Sleep, brain state and sensory processing
- F** Complex genetics of neurodegeneration
- G** Enabling novel research in neuroscience through microfluidics
- G** Non-invasive brain stimulation: from neuroenhancement to neurorehabilitation

Wednesday 13.15 - 15.15

- A** Exploring axonal development and connectivity
- B** Role of a novel type of synaptogenesis in memory formation
- D** The cortico-cerebellar system
- D** Metacognition and self-awareness
- E** Long term consequences of poor sleep on the brain
- F** Teasing out the mechanisms of depression
- F** Thinking of multiple sclerosis neurodegenerative pathology in a regenerative way

Poster Abstracts: The call for abstracts resulted in an unexpectedly high number of abstracts. We are grateful for the time that was spent by 85 reviewers (Appendix 2) who accepted over 700 abstracts which contributed to three poster sessions.

BNA2015: Distribution of Abstracts in Poster Sessions



Poster Prizes

One first prize and two runner-up prizes were awarded two categories (PhD Student and Postdoctoral Scientist). We are grateful to bioTechne for sponsoring these prizes, and to panel members (Panel: Richard Apps, Derk-Jan Dijk, Russell Foster, Gary Gilmour, Jenni Harvey, Kate Jeffery, Anne King and Alan Palmer; Chair: Narender Ramnani). Congratulations to the winners!

PhD Student Category

- **FIRST PRIZE: Michael Jay**, University of Leicester, Poster Ref: P3-C-027, Theme: C: Sensory and Motor Systems, *“Firing dynamics and modulatory actions of supraspinal dopaminergic neurons during locomotor behaviour.”*
- **RUNNER UP 1: Lauren Walmsley**, University of Manchester, Poster Ref: P2-E-014, Theme: E: Sleep, Circadian and Neuroendocrine Mechanisms. *“Eye-specific inputs to the mammalian suprachiasmatic nucleus”.*
- **RUNNER UP 2: Fiona Bull**, University of Dundee. Poster Ref: P1-B-002. Theme: B: Molecular, Cellular and Synaptic Mechanisms. *“Different roles for β -arrestin2 in morphine analgesia and reinforcement”*

Postdoctoral Scientist Category

- **FIRST PRIZE: Gulsen Surmeli**, University of Edinburgh, Poster Ref: P3-D-035, Theme: D: Learning, Memory and Cognition, *“Local projections of the medial entorhinal cortex layer 2 stellate and pyramidal cells to the deep MEC layers”.*
- **RUNNER UP 1: Yujiang Wang**, Newcastle University, Poster Ref: P1-A-005, Theme: A: Development, *“Influence of white matter connections on cortical gyrification”.*
- **RUNNER UP 2: Aude Belin-Rauscent**, University of Cambridge, Poster Ref: P3-F-052, Theme: F: Nervous System Disorders, *“The amygdala plays in stereo to recruit the ventral-to-dorsal striatal transitions in the control over cocaine seeking habits”.*

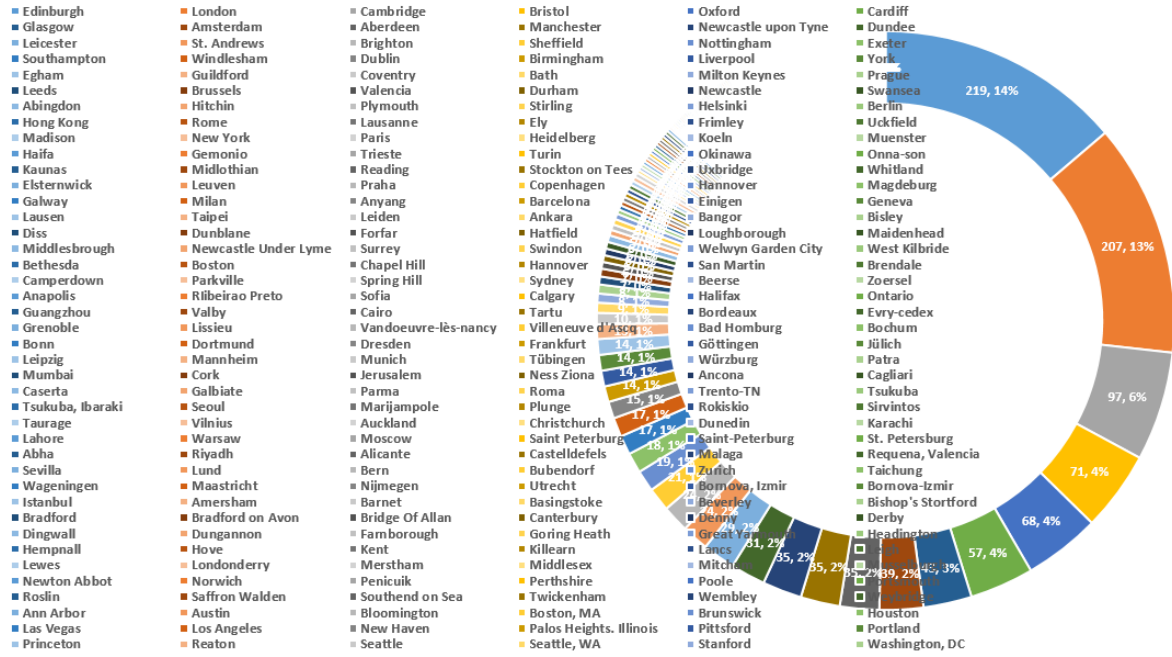
Delegates

We were very pleased with the exceptionally high level of interest in the meeting. For the first time for any BNA biennial meeting, online registrations had to be closed one month before the start of the meeting because of capacity concerns, and onsite registration plans cancelled, because the maximum number of registrations had been reached. About 1600 delegates were registered at the start of the meeting.

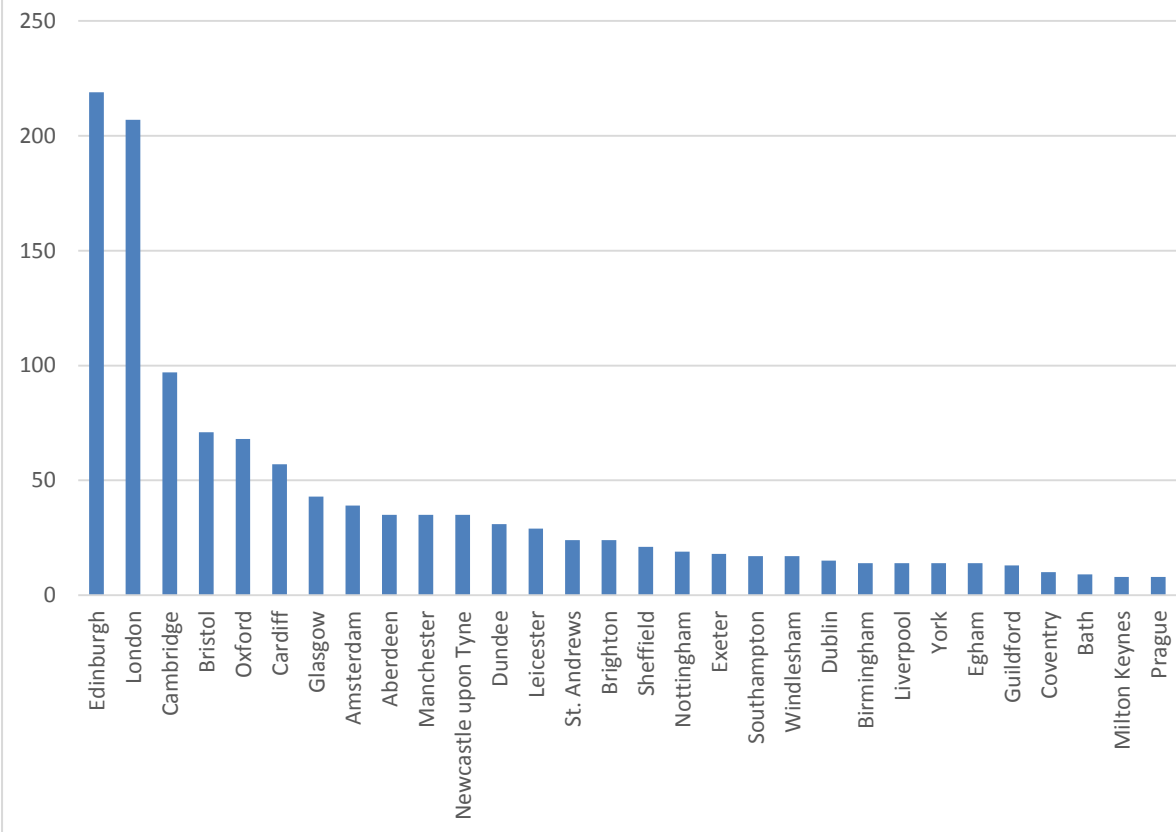
One of our main goals was to engage neuroscientists from across the UK, because concerns had previously been expressed that a meeting in Scotland might run the risk of low levels of interest from geographically distant centres of critical mass such as London. We were pleased that registrants came from about 150 national locations across the UK, including London, Oxford and Cambridge (see below).

We were also delighted to see delegates from about 100 international locations from across many locations in the EU and around the world, from as far afield as the west coast of the USA, Australia and New Zealand. This places us in an excellent position for FENS2020, also to be held in Scotland (see below).

UK and International Delegates



Three quarters of delegates came from the following 30 locations





Feedback

Delegate feedback from BNA2013 helped us to improve the structure and organisation of BNA2015. We hope that the results of the delegate survey for BNA2015 will allow us to make further improvements to future meetings. The results of the BNA2015 survey were extremely encouraging. A few highlights are presented below, and the full results will be available on the BNA website in due course.

- 464 respondents (~30% or delegates)
- 92% of respondents considered the meeting content to be either Excellent or Good
- 83% of respondents considered the coverage of the main areas of neuroscience to be sufficient
- 64% of respondents were early career scientists
- 65% of respondents were female*
- 15% of respondents were from black and minority ethnic backgrounds

How will we use this information to shape future meetings?

Proposals containing all male speaker lists were rejected for this meeting so women were represented at nearly every event. The proportion of women who attended this meeting is encouraging*. However, the BNA recognises that the participation of women in the programme itself could have been better. We are particularly committed increasing the proportion of women who contribute to the scientific programmes of future meetings. We aim to increase the proportion of women on programme committees, and to work towards a target of 50% representation in plenary speaker lists, symposia and workshops.

We also recognise the enthusiasm that early career scientists have for our meetings, and will ensure that their specific interests are better reflected in future programmes, and that they play an active role in shaping them.

Overall what did you think of the symposia and workshops?

Excellent	38.9%
Good	53.3%
Acceptable	6.5%
Poor	1.3%
Very Poor	0.0%

Was there sufficient coverage of the main areas of Neuroscience?

YES	83.2%
NO	16.8%

Who attended BNA2015?

Career Stage

Undergraduate	5.8%
Postgraduate/Pre-doctoral	42.9%
Research Assistant/ Post-doctoral	20.9%
Principal Investigator	22.6%
Other (please specify)	7.7%

We were very pleased to see that so many early career scientists attended the meeting

Gender*

Female	56.0%
Male	44.0%

Ethnicity

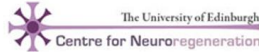
White	82.8%
Mixed/multiple ethnic groups	3.9%
Asian/Asian British	9.9%
Black/African/Caribbean/Black British	1.3%
Other (please specify)	2.1%

Future Meetings: BNA2017, BNA2019 and FENS2020 (Glasgow)

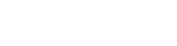
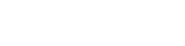
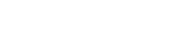
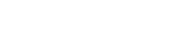
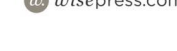
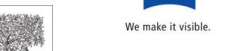
Our last two biennial meetings have been a great success, and I have enjoyed my role in these. However, it is time place this responsibility into the very capable hands of Dr. Thelma Lovick, the new BNA Meetings Secretary, who is already putting together plans for BNA2017. The BNA is also thinking ahead not only to BNA2019, but also to FENS2020 which will be held in Glasgow.

Thank you to our sponsors, donors and exhibitors...

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The University of Edinburgh
Edinburgh Neuroscience



Appendix 1: Programme Committee

- **Chair: Professor Narender Ramnani, Royal Holloway, University of London**
- Professor John Aggleton, University of Cardiff
- Professor Richard Apps, University of Bristol
- Dr Duncan Banks, The Open University
- Professor Sir Adrian Bird, University of Edinburgh
- Professor Peter Brophy, University of Edinburgh
- Professor Bob Burgoyne, University of Liverpool
- Dr Trevor Bushell, University of Strathclyde
- Professor Graham Collingridge, University of Bristol
- Professor Val Curran, University College London
- Professor Bill Deakin, University of Manchester
- Professor Derk-Jan Dijk, University of Surrey
- Professor Annette Dolphin, University College London
- Professor Mayank Dutia, University of Edinburgh
- Professor Sue Fleetwood-Walker, University of Edinburgh
- Professor Russell Foster, University of Oxford
- Professor Bruno Frenguelli, University of Warwick
- Professor Peter Geise, King's College London
- Dr Gary Gilmour, Lilly UK
- Dr Jenni Harvey, University of Dundee
- Professor Megan Holmes, University of Edinburgh
- Professor Christine Holt, University of Cambridge
- Professor Kate Jeffery, University College London
- Professor Anne King, University of Leeds
- Professor Heidi Johansen-Berg, University of Oxford
- Professor Dimitri Kullmann, University College London
- Professor Rob Lucas, University of Manchester
- Professor Chris Mathias, National Hospital for Neurology and Neurosurgery, London
- Professor Paul Matthews, Imperial College London
- Dr Mitul Mehta, Kings College London
- Professor Gero Miesenböck, University of Oxford
- Professor Mary Morrell, Imperial College London
- Professor Richard Morris, University of Edinburgh
- Professor Julia Newton, University of Newcastle
- Professor Kia Nobre, University of Oxford
- Professor David Nutt, Imperial College London
- Professor Mike Owen, University of Cardiff
- Professor Alan Palmer, MS Therapeutics
- Professor Trevor Robbins, University of Cambridge
- Professor John Rothwell, University College London
- Professor Dame Pamela Shaw, University of Sheffield
- Professor Attila Sik, University of Birmingham
- Professor Trevor Smart, University College London
- Professor Kate Storey, University of Dundee
- Professor Irene Tracey, University of Oxford

Appendix 2: Abstract Review Panel

- John Aggleton (University of Cardiff)
- Chris Mathias (National Hospital for Neurology and Neurosurgery, London)
- Robin Ali (University College London)
- Laura McCulloch (University of Edinburgh)
- Richard Apps (University of Bristol)
- Mitul Mehta (King's College, London)
- Mimoun Azzouz (University of Sheffield)
- Emiliano Merlo (University of Cambridge)
- Duncan Banks (The Open University)
- Keiko Mizuno (King's College London)
- Catherina Becker (University of Edinburgh)
- Celia Morgan (University of Exeter)
- Adrian Bird (University of Edinburgh)
- Mary Morrell (Imperial College London)
- Delphine Boche (University of Southampton)
- Richard Morris (The University of Edinburgh)
- Peter Brophy (University of Edinburgh)
- Julia Newton (University of Newcastle)
- Richard Brown (Dalhousie University, Canada)
- Matt Nolan (University of Edinburgh)
- Trevor Bushell (University of Strathclyde)
- David Nutt (Imperial College London)
- Michael Coleman (The Babraham Institute)
- Iris Oren (University of Edinburgh)
- Jeff Dalley (Cambridge University)
- Jacinta O'Shea (University of Oxford)
- Katrin Deinhardt (University of Southampton)
- Hugh Piggins (University of Manchester)
- Mayank Dutia (University of Edinburgh)
- Anna Planas (Institute for Biomedical Research, Spain)
- Julia Edgar (University of Glasgow)
- Bettina Platt (University of Aberdeen)
- Luigi Ferini-Strambi (Università Vita-Salute San Raffaele, Italy)
- Paul Reading (James Cook University Hospital)
- Sue Fleetwood-Walker (University of Edinburgh)
- Beatriz Rico (King's College London)
- Stephen Fleming (University of Oxford)
- Trevor Robbins (University of Cambridge)
- Russell Foster (University of Oxford)
- Oliver Robinson (University College London)
- Bruno Frenguelli (University of Warwick)
- Michelle Roche (National University of Ireland)

- Chris Frith (University College London)
- Jon Roiser (University College London)
- Nicholas Furl (Royal Holloway, University of London)
- John Rothwell (University College London)
- Lucia Garrido (Brunel University)
- Smita Saxena (University of Bern, Switzerland)
- Felicity Gavin (Imperial College London)
- Christoph Schmidt-Hieber (University College London)
- Karl Peter Giese (King's College London)
- Mala Shah (University College London)
- John Hardy (University College London)
- Pamela Shaw (University of Sheffield)
- Lindy Holden-Dye (University of Southampton)
- Rebecca Sims (Cardiff University School of Medicine)
- Megan Holmes (University of Edinburgh)
- Jeremy Skipper (University College London)
- Laurence Hunt (University College London)
- Tara Spires-Jones (University of Edinburgh)
- Anthony Isles (University of Cardiff)
- Mike Stewart (The Open University)
- Mandy Jackson (The University of Edinburgh)
- Kate Storey (University of Dundee)
- Andrew Jackson (Newcastle University)
- Jessica Teeling (Southampton General Hospital)
- Kate Jeffery (University College London)
- Alexander Thiele (University of Newcastle)
- Alan Johnston (University College London)
- Irene Tracey (University of Oxford)
- Julija Krupic (University College London)
- Johannes van Noort (Delta Crystallon BV, The Netherlands)
- Dimitri Kullmann (Brain)
- Richard Wade-Martins (University of Oxford)
- Tilo Kunath (University of Edinburgh)
- Katie Warnaby (University of Oxford)
- Melike Lakadamyali (The Institute of Photonic Sciences)
- Margriet Westerterp (Maastricht University, The Netherlands)
- Thelma Lovick (University of Bristol)
- Robin Williams (Royal Holloway University of London)
- Rob Lucas (University of Manchester)
- Michele Zagnoni (University of Strathclyde)
- Marina Lynch (Trinity College, Dublin)
- Adam Zeman (University of Exeter)
- David Lyons (University of Edinburgh)

Local Organising Committee

- Dr Jane Haley (Chair)
- Professor Peter Brophy
- Professor Charles ffrench-Constant
- Professor Catherina Becker
- Dr Veronique Miron

Organising Team

- Narender Ramnani (Programme Chair)
- Karen Schlaegel (Project Manager)
- Cecilia Golborne (BNA Office)
- Louise Tratt (BNA Office)
- Duncan Banks (Press Office)
- Ian Varndell
- Uta Boeger-Brown and her team at BioMedEx
- Amy Bull and her team at the EICC