

# Paul M Bays

## Professor of Computation and Cognition

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### Contact Details

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### Education & Employment

1995 – 2000 Downing College, University of Cambridge  
Natural Sciences (Experimental Psychology) BA Hons

2001 – 2002 Research Fellow & Lab Manager, Institute of Neurology, University College London

2003 – 2006 PhD in Neurological Studies, University of London  
Wellcome Prize Studentship, supervised by Prof. Daniel Wolpert

2006 – 2010 Senior Research Fellow, UCL Institute of Cognitive Neuroscience  
Cognitive Neurology group led by Prof. Masud Husain

2010 – 2015 Wellcome-Beit Prize & Research Career Development Fellow  
Institute of Neurology, University College London

2013 – 2014 Visiting Scholar, Institute of Cognitive and Brain Sciences  
University of California, Berkeley

2015 – 2022 Wellcome Trust Senior Research Fellow in Basic Biomedical Science  
Department of Psychology, University of Cambridge

2022 – Professor of Computation and Cognition  
Department of Psychology, University of Cambridge

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### Grants & Prizes

Jan 2003 Wellcome Trust Prize Studentship (£70,352)  
*“Modularity of multiple task learning in sensorimotor control”*

Jan 2010 Rank Prize Funds Committee Prize  
*Best contributed paper at a Rank Prize Fund Symposium*

2008 – 2010 Guarantors of Brain Travel Grants  
*Cognitive Neuroscience Society Annual Meetings (2008, 2009)*  
*Society for Neuroscience Annual Meeting (2010)*

Oct 2010 Wellcome Trust Career Development Fellowship (£705,745)  
*“Prioritization of sensory resources for action in the healthy and lesioned brain”*

Oct 2010 Wellcome-Beit Prize Fellowship (£25,000)  
*Prize awarded for an outstanding Wellcome Trust Fellowship application*

Oct 2015 Wellcome Trust Senior Research Fellowship (£1,390,747)  
*“Noise in neural codes: consequences for memory, exploration and decision-making”*

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## Academic Supervision

2008	Albert Hoang	Research Assistant
2009	Rebecca Sternschein	Research Assistant
2010	Emma Wu (Dowd)	MSc Project
2010 – 2012	Muy-Cheng Peich	MSc Project
2010 – 2012	Louise Marshall	Research Assistant
2012	Maïke Heider	MSc Project
2013 – 2015	Leonie Oostwoud-Wijdenes	Post-Doctoral Research Associate
2015 –	Sebastian Schneegans	Post-Doctoral Research Associate
2015 – 2016	Ben Dowding	Research Technician / Programmer
2016 – 2018	David Aagten-Murphy	Post-Doctoral Research Associate
2017 – 2018	Will Harrison	Post-Doctoral Research Associate
2017 – 2018	Robert Taylor	Post-Doctoral Research Associate
2018	Lisa Kröll	MSc Project
2018 – 2021	Ivan Tomić	Post-Doctoral Research Associate
2019	Thomas Fontaine	MSc Project
2019 – 2020	Garry Kong	Post-Doctoral Research Associate
2019 – 2020	Jessica McMaster	Research Assistant
2021 – 2022	Dagmar Adamcová	Research Assistant
2020 –	Zahara Girones	Post-Doctoral Research Associate
2021 –	Adam Prochazka	MPhil Student / Research Assistant
2022	Rodrigo Raimundo-Ramos	Research Assistant

**Advisor/2nd Supervisor to PhDs (2011 – present):** Loic Matthey, David Young, Alejandro Chandia-Jorquera, Emilie De Montpellier de Vedrin.

**Visiting PhD Students and PhD Rotations (2016 – present):** Ivan Tomić, Svea Schröder, Selma Lugtmeijer, Emily Danby, Nicola Vale.

**Undergraduate projects (2009 – present):** Raquel Catalao, Natalie Wee, Gemma Cheng, Akshay Jagadeesh, Charlotte Diss, Faiyaz Islam, Muhammad Zachry, Leo Penrose, Srishti Agarwal, Anthony Yew-Kheen Tang, Katherine Irwin, Mette Westander, Shara Nahreen, Frederick Wilkinson, Iham Mohamed-Kasem, Georgina Brown, Nancy Niu, Macky Padilla, Zheyuan Yang, Eve Oostendorp, Gaspard Oliviers, Jonathan Chan, Vinisha Agrawal, Adam Sabo, Tom Wenban-Smith, Máté Feher, Paul McMeekin, Rodrigo Raimundo-Ramos, Kirish Rajaseelan, Marcus Ho Ho, Chamin Halahakoon, Tim Lin, Chentianyi Yang.

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## Teaching & Assessment

2010 – 2013	Guest Lecturer, UCL MSc in Clinical Neuroscience
2016 – 2019	<i>Neuroscience of Decision Making</i> , 3 lecture course, Cambridge PBS IA
2016 – 2019	<i>Working Memory</i> , 2 lectures in <i>Human Memory</i> course, Cambridge NST/PBS II
2019 –	<i>Computational Approaches to Cognition</i> , 8 lecture course, Cambridge NST/PBS II
2016 –	Supervisions (small-group teaching) associated with above
2019 –	Assessor, Cambridge PBS IA and NST II papers
2020	Examiner, Cambridge NST II Biological & Biomedical Sciences
2021 –	Course Organizer & Examiner, Cambridge PBS IA paper 2
2021 –	Senior Examiner, Cambridge PBS Part I

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## PhDs Examined

2017	Elisa Zamboni, University of Nottingham
2017	Muhammet Ikbal Sahan, University of Ghent, Belgium
2018	Mohsen Sadeghi, Cambridge Engineering Dept
2019	James Heald, Cambridge Engineering Dept

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## Academic & Professional Contributions (selected)

2016 – 2021 Sutton Trust Summer School (Widening Participation programme), Cambridge  
2016 – Department Research Ethics Committee, Cambridge Psychology Dept  
2016 – Wellbeing, Equality & Diversity Committee, Cambridge Psychology Dept  
2017 – 2020 Chair of Computing Management Group, Cambridge Psychology Dept  
2019 Speaker, Oxford & Cambridge Student Conference (Widening Participation event)  
2019 – 2021 Mentor, Post-Doc Mentoring Scheme, Cambridge Office of Postdoctoral Affairs  
2019 – External Consultant, DeepMind  
2020 – Academic Lead for IT & Chair of Information Committee, Cambridge Psychology Dept  
2023 – Psychology Research Ethics Committee, Cambridge University

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## Peer Review

Agence Nationale de la Recherche, France	Fund for Scientific Research, Belgium
Austrian Science Fund (FWF)	Israel Science Foundation
The Brain Tumour Charity, UK	National Science Foundation (NSF), USA
Dutch Research Council (NWO), The Netherlands	New York University, USA
Economic & Social Research Council, UK (ESRC)	The Stroke Association, UK
Engineering & Physical Sciences Research Council, UK (EPSRC)	Swiss National Science Foundation
European Research Council	US-Israel Binational Science Foundation
	Wellcome Trust, UK

Ad hoc reviewer for journals including Science, PNAS, Nature Communications, Nature Human Behaviour, PLOS Biology, Psychological Review, Psychological Science, Brain.

Guest Editor for eLife in 2019 & 2022.

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## Publications

1. Shergill SS, Bays PM, Frith CD & Wolpert DM (2003)  
*Two eyes for an eye: The neuroscience of force escalation*  
Science 301: 187
2. Caithness G, Osu R, Bays P, Chase H, Klassen J, Kawato M, Wolpert DM & Flanagan JR (2004)  
*Failure to consolidate the consolidation theory of learning for sensorimotor adaptation tasks*  
Journal of Neuroscience 24(40): 8662–8671
3. Bays PM, Flanagan JR & Wolpert DM (2005)  
*Interference between velocity- and position-dependent force-fields indicates that tasks depending on different kinematic parameters compete for motor working memory*  
Experimental Brain Research 163: 400–405
4. Bays PM, Wolpert DM & Flanagan JR (2005)  
*Perception of the consequences of self-action is temporally tuned and event driven*  
Current Biology 15: 1125–1128
5. Shergill SS, Samson G, Bays PM, Frith CD & Wolpert DM (2005)  
*Evidence for sensory prediction deficits in schizophrenia*  
American Journal of Psychiatry 162: 2384–2386
6. Bays PM & Wolpert DM (2006)  
*Actions and consequences in bimanual interaction are represented in different coordinate systems*  
Journal of Neuroscience 26(26): 7121–7126

7. [Bays PM, Flanagan JR & Wolpert DM \(2006\)](#)  
*Attenuation of self-generated tactile sensations is predictive, not postdictive*  
PLOS Biology 4(2): e28
8. [Tcheang L, Bays PM, Ingram JN & Wolpert DM \(2007\)](#)  
*Simultaneous bimanual dynamics are learned without interference*  
Experimental Brain Research 183(1): 17–25
9. [Voss M, Bays PM, Rothwell JC & Wolpert DM \(2007\)](#)  
*An improvement in perception of self-generated tactile stimuli following theta-burst stimulation of primary motor cortex*  
Neuropsychologia 45(12): 2712–2717
10. [Bays PM & Wolpert DM \(2007\)](#)  
*Predictive attenuation in the perception of touch*  
Attention & Performance XXII: Sensorimotor Foundations of Higher Cognition Oxford University Press (Eds: P Haggard, Y Rosetti, M Kawato)
11. [Bays PM & Wolpert DM \(2007\)](#)  
*Computational principles of sensorimotor control that minimise uncertainty and variability*  
Journal of Physiology 578(2): 387–396
12. [Bays PM & Husain M \(2007\)](#)  
*Spatial remapping of the visual world across saccades*  
Neuroreport 18(12): 1207–1213
13. [Hoang Duc A, Bays PM & Husain M \(2008\)](#)  
*Eye movements as a probe of attention*  
Progress in Brain Research 171: 403–411
14. [Bays PM & Husain M \(2008\)](#)  
*Dynamic shifts of limited working memory resources in human vision*  
Science 321: 851–854
15. [Bays PM & Husain M \(2009\)](#)  
*Response to comment on “Dynamic shifts of limited working memory resources in human vision”*  
Science 323: 877
16. [Bays PM, Catalao RFG & Husain M \(2009\)](#)  
*The precision of visual working memory is set by allocation of a shared resource*  
Journal of Vision 9(10): 7, 1–11
17. [Bays PM, Singh-Curry V, Gorgoraptis N, Driver J & Husain M \(2010\)](#)  
*Integration of goal- and stimulus-related visual signals revealed by damage to human parietal cortex*  
Journal of Neuroscience 30(17): 5968–5978
18. [Bays P \(2010\)](#)  
*Precision versus capacity of working memory in schizophrenic and healthy individuals*  
Archives of General Psychiatry Online 16 July
19. [Bays PM, Wu EY & Husain M \(2011\)](#)  
*Storage and binding of object features in visual working memory*  
Special Issue: “Interactions between attention and visual short-term memory (VSTM)”  
Neuropsychologia 49: 1622–1631
20. [Gorgoraptis N, Catalao RFG, Bays PM & Husain M \(2011\)](#)  
*Dynamic updating of working memory resources for visual objects*  
Journal of Neuroscience 31(23): 8502–8511
21. [Bays PM, Gorgoraptis N, Wee N, Marshall L & Husain M \(2011\)](#)  
*Temporal dynamics of encoding, storage and reallocation of visual working memory*  
Journal of Vision 11(10): 6, 1–5

22. Zokaei N, Gorgoraptis N, Bahrami B, Bays PM & Husain M (2011)  
*Precision of working memory for visual motion sequences and transparent motion surfaces*  
Journal of Vision 11(14): 2, 1–18
23. Adam R, Bays PM & Husain M (2012)  
*Rapid decision-making under risk*  
Cognitive Neuroscience 3(1): 52–61
24. Burnett Heyes S, Adam R, Urner M, van der Leer L, Bahrami B, Bays PM & Husain M (2012)  
*Impulsivity and rapid decision-making for reward*  
Frontiers in Psychology 3: 153
25. Burnett Heyes S, Zokaei N, van der Staaij I, Bays PM & Husain M (2012)  
*Development of visual working memory precision in childhood*  
Developmental Science 15(4) 528–39
26. Bays PM & Husain M (2012)  
*Active inhibition and memory promote exploration and search of natural scenes*  
Journal of Vision 12(8):8, 1–18
27. Pertzov Y, Bays PM, Joseph S & Husain M (2012)  
*Rapid forgetting prevented by retrospective attention cues*  
Journal of Experimental Psychology: Human Perception & Performance 39(5): 1224–31
28. Marshall L & Bays PM (2013)  
*Obligatory encoding of task-irrelevant features depletes working memory resources*  
Journal of Vision 13(2):21, 1–13
29. Shergill SS, White T, Joyce DW, Bays PM, Wolpert DM & Frith C (2013)  
*Modulation of somatosensory processing by action*  
Neuroimage 70, 356–362
30. Jacquin-Courtois S, Bays PM, Saleme R, Leff AP & Husain M (2013)  
*Rapid compensation of visual search strategy in patients with chronic visual field defects*  
Cortex 49(4):994–1000
31. Adam R, Leff A, Sinha N, Turner C, Bays P, Draganski B & Husain M (2013)  
*Dopamine reverses reward insensitivity in apathy following globus pallidus lesions*  
Cortex 49(5):1292–303
32. Peich M-C, Husain M & Bays PM (2013)  
*Age-related decline of precision and binding in visual working memory*  
Psychology & Aging 28(3): 729–43
33. Shergill SS, White TP, Joyce DW, Bays PM, Wolpert DM & Frith CD (2014)  
*Functional magnetic resonance imaging of impaired sensory prediction in schizophrenia*  
JAMA Psychiatry 71(1): 28–35
34. Pearson B, Raskevicius J, Bays PM, Pertzov Y & Husain M (2014)  
*Working memory retrieval as a decision process*  
Journal of Vision 14(2): 2
35. Ma WJ, Husain M & Bays PM (2014)  
*Changing concepts of working memory*  
Nature Neuroscience 17(3): 347–356
36. Bays PM (2014)  
*Noise in neural populations accounts for errors in working memory*  
Journal of Neuroscience 34(10): 3632–3645
37. Ong Y-H, Jacquin-Courtois S, Gorgoraptis N, Bays PM, Husain M & Leff AP (2015)  
*Eye-Search: a web-based therapy that improves visual search in hemianopia*  
Annals of Clinical and Translational Neurology 2(1): 74–78
38. Matthey L, Bays PM & Dayan P (2015)  
*A probabilistic palimpsest model of visual short-term memory*  
PLOS Computational Biology 11(1): e1004003

39. Oostwoud Wijdenes L, Marshall L & Bays PM (2015)  
*Evidence for optimal integration of visual feature representations across saccades*  
Journal of Neuroscience 35(28): 10146–10153
40. Bays PM (2015)  
*Spikes not slots: noise in neural populations limits working memory*  
Trends in Cognitive Sciences 19(8): 431–438
41. Bays PM (2016)  
*Evaluating and excluding swap errors in analogue tests of working memory*  
Scientific Reports 6: 19203
42. Schneegans S & Bays PM (2016)  
*No fixed item limit in visuospatial working memory*  
Cortex 83: 181–193
43. Oostwoud Wijdenes L, Ivry RB & Bays PM (2016)  
*Competition between movement plans increases motor variability: evidence of a shared resource for movement planning*  
Journal of Neurophysiology 116(3): 1295–303
44. Bays PM (2016)  
*A signature of neural coding at human perceptual limits*  
Journal of Vision 16(11): 4
45. Richter FR†, Cooper RA†, Bays PM & Simons JS (2016)  
*Distinct neural mechanisms underlie the success, precision, and vividness of episodic memory*  
eLife 5: e18260
46. Cooper RA, Richter FR, Bays PM, Plaisted-Grant KC, Baron-Cohen S & Simons JS (2017)  
*Reduced hippocampal functional connectivity during episodic memory retrieval in autism*  
Cerebral Cortex 27: 888–902
47. Bays PM & Dowding BA (2017)  
*Fidelity of the representation of value in decision-making*  
PLOS Computational Biology 13(3): e1005405
48. Schneegans S & Bays PM (2017)  
*Neural architecture for feature binding in visual working memory*  
Journal of Neuroscience 37(14): 3913–3925
49. Aagten-Murphy D & Bays PM (2017)  
*Automatic and intentional influences on saccade landing*  
Journal of Neurophysiology 118: 1105–1122
50. Schneegans S & Bays PM (2017)  
*Restoration of fMRI decodability does not imply latent working memory states*  
Journal of Cognitive Neuroscience 29(12): 1977–1994
51. Bays PM & Taylor R (2018)  
*A neural model of retrospective attention in visual working memory*  
Cognitive Psychology 100: 43–52
52. Bays PM (2018)  
*Reassessing the evidence for capacity limits in neural signals related to working memory*  
Cerebral Cortex 28(4): 1432–1438
53. Harrison WJ & Bays PM (2018)  
*Visual working memory is independent of the cortical spacing between memoranda*  
Journal of Neuroscience 38(12): 3116–3123
54. Schneegans S & Bays PM (2018)  
*Drift in neural population activity causes working memory to deteriorate over time*  
Journal of Neuroscience 38(21): 4859–4869

55. [Bays PM](#) (2018)  
*Failure of self-consistency in the discrete resource model of visual working memory*  
Cognitive Psychology 105: 1–8
56. Taylor R & [Bays PM](#) (2018)  
*Efficient coding in visual working memory accounts for stimulus-specific variations in recall*  
Journal of Neuroscience 38(32): 7132–7142
57. Schneegans S & [Bays PM](#) (2018)  
*New perspectives on binding in visual working memory*  
British Journal of Psychology 110(2): 207–244
58. Machner B, Könemund I, von der Gablentz J, [Bays PM](#) & Sprenger A (2018)  
*The ipsilesional attention bias in right hemisphere stroke patients as revealed by a realistic visual search task: neuroanatomical correlates and functional relevance*  
Neuropsychology 32(7): 850–865
59. Tomić I & [Bays PM](#) (2018)  
*Internal but not external noise frees working memory resources*  
PLOS Computational Biology 14(10): e1006488
60. Aagten-Murphy D & [Bays PM](#) (2019)  
*Functions of memory across saccadic eye movements*  
Current Topics in Behavioral Neurosciences 41:155–183
61. Richter FR, [Bays PM](#), Jeyarathnarajah P & Simons J (2019)  
*Flexible updating of dynamic knowledge structures*  
Scientific Reports 9(1): 2272
62. Aagten-Murphy D & [Bays PM](#) (2019)  
*Independent working memory resources for egocentric and allocentric spatial information*  
PLOS Computational Biology 15(2): e1006563
63. Salmela VR, Ölander K, Muukkonen I & [Bays PM](#) (2019)  
*Recall of facial expressions and simple orientations reveals competition for resources at multiple levels of the visual hierarchy*  
Journal of Vision 19(3): 8
64. Nord CL, Popa T, Smith E, Hannah R, Doñamayor N, Weidacker K, [Bays PM](#), Rothwell J & Voon V (2019)  
*The effect of frontoparietal paired associative stimulation on decision-making and working memory*  
Cortex 117: 266–276
65. Taylor R & [Bays PM](#) (2020)  
*Theory of neural coding predicts an upper bound on estimates of memory variability*  
Psychological Review 127(5): 700–718
66. Schneegans S, Taylor R & [Bays PM](#) (2020)  
*Stochastic sampling provides a unifying account of working memory limits*  
Proceedings of the National Academy of Sciences 2020 Aug, 202004306
67. [Bays PM](#) (2020)  
*Correspondence between population coding and psychophysical scaling models of working memory*  
bioRxiv doi:10.1101/699884
68. Lugtmeijer S†, Schneegans S†, Lammers NA, Geerligs L, De Leeuw FEH, De Haan EH, [Bays PM](#) & Kessels RP (2021)  
*Consequence of stroke for feature recall and binding in visual working memory*  
Neurobiology of Learning and Memory 2021 Jan 15: 107387
69. Schneegans S, Harrison WJ & [Bays PM](#) (2021)  
*Location-independent feature binding in visual working memory for sequentially presented objects*  
Attention, Perception & Psychophysics 83: 2377–2393

70. Kong G†, Kroell LM†, Schneegans S, Aagten-Murphy D & Bays PM (2021)  
*Transsaccadic integration relies on a limited memory resource*  
Special Issue: "From Peripheral to Transsaccadic and Foveal Perception"  
Journal of Vision May 3; 21(5): 24
71. Harrison WJ, McMaster JMV & Bays PM (2021)  
*Limited memory for ensemble statistics in visual change detection*  
Cognition 214: 104763
72. Kong G, Aagten-Murphy D, McMaster JMV & Bays PM (2021)  
*Transsaccadic integration operates independently in different feature dimensions*  
Special Issue: "From Peripheral to Transsaccadic and Foveal Perception"  
Journal of Vision Jul 6; 21(7): 7
73. Brown G†, Kasem I†, Bays PM & Schneegans S (2021)  
*Mechanisms of feature binding in visual working memory are stable over long delays*  
Journal of Vision 21(12): 7
74. Schneegans S, McMaster JMV & Bays PM (2022)  
*Role of time in binding features in visual working memory*  
Psychological Review 2023 Jan;130(1):137-154. Epub 2022 Jan 31
75. McMaster JMV, Tomić I, Schneegans S & Bays PM (2022)  
*Swap errors in visual working memory are fully explained by cue-feature variability*  
Cognitive Psychology 137 (2022) 101493
76. Taylor R†, Tomić I†, Aagten-Murphy D & Bays PM (2022)  
*Working memory is updated by reallocation of resources from obsolete to new items*  
Attention, Perception & Psychophysics 2022 Oct 17. Online ahead of print
77. Tomić I & Bays PM (2022)  
*Perceptual similarity judgments do not predict the distribution of errors in working memory*  
Journal of Experimental Psychology: Learning, Memory and Cognition 2022 Nov 28. Online ahead of print
78. Bays PM, Schneegans S, Ma WJ & Brady TF (preprint)  
*Representation and computation in working memory*  
PsyArXiv doi:10.31234/osf.io/kubr9
79. Tomić I & Bays PM (preprint)  
*A dynamic neural resource model bridges sensory and working memory*  
bioRxiv doi:10.1101/2023.03.27.534406

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## Invited Talks & Seminars

Oct 2007	British Neuropsychological Society Meeting, London, UK	Invited talk
Jan 2008	Computational and Biological Learning Labs, University of Cambridge, UK	Invited talk
Feb 2008	School of Psychology, University of Nottingham, UK	Seminar
Sep 2008	Wellcome Trust Centre for Neuroimaging, London, UK	Seminar
Oct 2008	Department of Experimental Psychology, Ghent University, Belgium	Seminar
May 2009	Department of Psychology, Royal Holloway, University of London, UK	Seminar
Jun 2009	Workshop on Gaze Patterns in Dynamic Displays, Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany	Invited talk
Nov 2009	Department of Psychology, University of York, UK	Seminar



Jan 2010	Rank Prize Fund Symposium: "What Determines Where and When We Look?", Grasmere, UK	Invited talk
Feb 2010	School of Optometry and Vision Science, University of Bradford, UK	Seminar
Jun 2010	MRC Cognition and Brain Sciences Unit, Cambridge, UK	Seminar
Jun 2010	Max Planck Institute for Human Cognitive and Brain Sciences, Leipzig, Germany	Seminar
Sep 2010	School of Psychology, Bangor University, UK	Seminar
Nov 2010	Beit Memorial and Wellcome-Beit Prize Annual Meeting, Wellcome Trust, UK	Invited talk
Oct 2010	Department of Experimental Psychology, University of Bristol, UK	Seminar
Mar 2011	Vision for Action Symposium, University College London, UK	Invited talk
Aug 2011	Working Memory Symposium, 5th International Conference on Memory, York, UK	Invited talk
Nov 2011	Institute of Movement Neuroscience "Open Day", University College London, UK	Invited talk
Nov 2011	Beit Memorial and Wellcome-Beit Prize Annual Meeting, Wellcome Trust, UK	Invited talk
Oct 2012	Institute of Cognitive and Brain Sciences, University of California, Berkeley, CA, USA	Seminar
Dec 2012	Cognitive Psychology Institute, University of Saarland, Germany	Seminar
Apr 2013	Visual Neuroscience Group, University of Nottingham, UK	Invited talk
May 2013	Symposium on "The Structure of Visual Working Memory", Vision Sciences Society Annual Meeting, Naples, FL, USA	Invited talk
Jul 2013	Workshop on "Neural Mechanisms of Working Memory Limits", Organization for Computational Neurosciences (CNS) Annual Meeting, Paris, France	Invited talk
Oct 2013	Vision Science, University of California, Berkeley, CA, USA	Seminar
Dec 2013	Centre for Neural Science, New York University, NY, USA	Seminar
Apr 2014	Cognitive Neuroscience Group (D'Esposito lab), Helen Wills Neuroscience Institute, University of California, Berkeley, CA, USA	Invited talk
May 2014	Centre for Mind and Brain, University of California, Davis, CA, USA	Seminar
Jul 2014	Department of Psychology, University of Cambridge, UK	Seminar
Oct 2014	Smith Kettlewell Eye Research Institute, San Francisco, CA, USA	Seminar
Jan 2015	Department of Psychology, University of California, San Diego, CA, USA	Seminar
Feb 2015	Department of Psychology, Columbia University, New York, NY, USA	Seminar
Feb 2015	Department of Cognitive Science, University of California, San Diego, CA, USA	Seminar
Apr 2015	Department of Psychology, University of Zurich, Switzerland	Seminar
Jul 2015	Conference on "Adaptive Brains and Machines", University of Cambridge, UK	Invited talk
Oct 2015	Bernstein Sparks Workshop on Active Perceptual Memory, Berlin, Germany	Invited talk

Dec 2015	Beit Memorial and Wellcome-Beit Prize Annual Meeting, Wellcome Trust, UK	Keynote
Dec 2015	Neuro-Cognitive Psychology (Master Program) Day, Department of Psychology, University of Munich, Germany	Keynote
Jan 2016	Laboratoire Psychologie de la Perception, Université Paris Descartes, France	Seminar
Jan 2016	Computational and Biological Learning Labs, University of Cambridge, UK	Invited talk
Feb 2016	Adaptive Brain Lab, Department of Psychology, University of Cambridge, UK	Invited talk
Feb 2016	2nd International Workshop on Cognitive Neuroscience Robotics, Osaka, Japan	Invited talk
Sep 2016	Oxford Autumn School in Cognitive Neuroscience, University of Oxford, UK	Invited talk
Oct 2016	Donders Institute for Brain, Cognition & Behaviour, Nijmegen, The Netherlands	Seminar
Dec 2016	Wellcome Trust Researchers Meeting: Neuroscience & Mental Health, Berkhamsted, UK	Invited talk
Feb 2017	Visual Working Memory Symposium, New York University Abu Dhabi, United Arab Emirates	Invited talk
Aug 2017	Symposium on "Mnemonic Priorities: Dynamic Interplays Between Attention and Working Memory", International Conference for Cognitive Neuroscience (ICON), Amsterdam, The Netherlands	Invited talk
Mar 2018	Workshop on "Circuit Dynamics in Working Memory", Computational and Systems Neuroscience (Cosyne) Annual Meeting, Denver, CO, USA	Invited talk
May 2018	MRC Cognition and Brain Sciences Unit, Cambridge, UK	Seminar
Jul 2018	CITEC Vision Science Colloquium, Bielefeld University, Germany	Seminar
Mar 2019	Department of Experimental Psychology, University of Oxford, UK	Seminar
Jul 2019	Workshop on "The dynamics and limitations of working memory", Organization for Computational Neurosciences (CNS) Annual Meeting, Barcelona, Spain	Invited talk
Sep 2019	Zuckerman Institute, Columbia University, New York, NY, USA	Invited talk
Oct 2020	Department of Psychology, University of York, UK	Seminar
Apr 2021	School of Psychology, University of Queensland, Australia	Seminar
Jun 2021	Department of Psychology, University of Giessen, Germany	Seminar
Jul 2021	Symposium: Finding synthesis among neurocomputational accounts of working memory, MathPsych/ICCM Conference	Invited talk
Sep 2021	Psychonomic Society Leading Edge Workshop	Invited talk
Mar 2022	Computation@Cambridge Workshop, University of Cambridge, UK	Speaker & Organizer
Jul 2022	Panel on "Cancellation of self-generated sensations", Neural Control of Movement Annual Meeting, Dublin, Ireland	Discussant
Oct 2022	Adrian Seminar in Neuroscience, Department of Physiology, Development & Neuroscience, University of Cambridge, UK	Seminar
Mar 2023	Zurich Center for Neuroeconomics, University of Zurich, Switzerland	Seminar
Mar 2023	<i>Dutch Perception Day, University of Utrecht, Netherlands</i>	<i>Keynote</i>