FRANK TONG

CURRICULUM VITAE

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EDUCATION

1990–1995	Queen's University, Canada	B.S. in Psychology
1995–1998	Harvard University	M.A. in Experimental Psychology
1998–1999	Harvard University	Ph.D. in Experimental Psychology *Awarded on November 16, 1999*

ACADEMIC APPOINTMENTS

1999 – 2000   McDonnell-Pew Post-Doctoral Research Fellow
University of California, Los Angeles, Department of Psychology

2000 – 2004   Assistant Professor
Princeton University, Department of Psychology

2004 – 2007   Assistant Professor
Vanderbilt University, Department of Psychology

2007 – 2012   Associate Professor
Vanderbilt University, Department of Psychology

2012 – 2018   Full Professor
Vanderbilt University, Department of Psychology
Vanderbilt Univ Medical School, Ophthalmology and Visual Sciences

2019   Centennial Professor
Vanderbilt University, Department of Psychology

RESEARCH FOCI

- Neural bases of visual perception, attention, working memory, and object recognition
- Integration of psychophysical methods, image processing, computational modeling and advanced neuroimaging approaches to characterize human visual processing
- Medical image perception and radiological expertise
- Development of deep learning networks to model biological vision, face and object recognition, and perceptual learning

AWARDS AND HONORS

1990 – 1995	Full undergraduate scholarship plus stipend, Queen's University
1992 – 1993	NSERC Summer Research Award
1994	Ann Adamson Award in Psychology, Queen's University
1995	Medal in Psychology for highest GPA, Queen's University
1995 – 1997	Merit-Based Graduate Fellowship, Harvard University
1995 – 1999	NSERC Post-Graduate Scholarship
1999 – 2002	*McDonnell-Pew* Training Fellowship in Cognitive Neuroscience
2003 – 2004	*Robert K. Root Preceptorship*, Princeton University
2004 – 2005	*Scientific American 50*. Award to honor 50 individuals, teams, companies or other organizations for accomplishments in research, business, or policy making in 2004 – 2005
2006	*Young Investigator Award*, Cognitive Neuroscience Society
2008	*Chancellor's Award for Research*, Vanderbilt University
2009	*Young Investigator Award*, Vision Sciences Society
2010	*Troland Research Award in Psychology*, National Academy of Sciences

PUBLICATIONS

Tong, F., Nakayama, K., Vaughan, J. T., & Kanwisher, N. (1998). Binocular rivalry and visual awareness in human extrastriate cortex. *Neuron, 21*, 753-759.

Kanwisher, N., Tong, F., & Nakayama, K. (1998). The effects of face inversion on the human fusiform face area. *Cognition, 68*, B1-B11.

Tong, F., & Nakayama, K. (1999). Robust representations for faces: Evidence from visual search. *Journal of Experimental Psychology: Human Perception and Performance, 25,* 1016-1035.

Tong, F., Nakayama, K., Moscovitch, M., Weinrib, O., & Kanwisher, N. (2000). Response properties of the human fusiform face area. *Cognitive Neuropsychology, 17*, 257-279.

Cohen, J. D., & Tong, F. (2001). The face of controversy: *Science, 293,* 2405-2407.

Tong, F. (2001). Brain at work: Play by play. *Nature Neuroscience, 4,* 560-562.

Tong, F. (2001). Competing theories of binocular rivalry: A possible resolution. *Brain and Mind, 2,* 55–83.

Tong, F., & Engel, S. A. (2001). Interocular rivalry revealed in the human cortical blind-spot representation. *Nature, 411,* 195-199.

Tong, F. (2003). Out of body experiences: From Penfield to present. *Trends in Cognitive Sciences, 7,* 104-106.

Tong, F. (2003). Primary visual cortex and visual awareness. *Nature Reviews Neuroscience, 4,* 219-229.

Tong, F. (2004). Splitting the spotlight of visual attention. *Neuron, 42,* 524-526.

Meng, M. & Tong, F. (2004). Can attention bias bistable perception? Differences between binocular rivalry and ambiguous figures. *Journal of Vision, 4,* 539-551.

Awater, H., Kerlin, J. K., Evans, K. K., & Tong, F. (2005). Cortical representation of space around the blind spot. *Journal of Neurophysiology, 94,* 3314-3324.

Kamitani, Y., & Tong, F. (2005). Decoding the visual and subjective contents of the human brain. *Nature Neuroscience, 8*, 679-685.

Meng, M., Remus, D. R., & Tong, F. (2005). Filling-in of visual phantoms in the human brain. *Nature Neuroscience, 8*, 1248-1254.

Kamitani, Y, & Tong, F. (2006). Decoding seen and attended motion directions from activity in the human visual cortex. *Current Biology*, 16, 1096-1102.

Tong, F., Meng, M., & Blake, R. (2006). Neural bases of binocular rivalry. *Trends in Cognitive Science*, *10*, 502-511.

McKeeff, T. J., Remus, D. R., & Tong, F. (2007). Temporal limitations in object processing across the human ventral visual pathway. *Journal of Neurophysiology, 98*, 382-393.

McKeeff, T. J., & Tong, F. (2007). The timing of perceptual decisions for ambiguous face stimuli in the human ventral visual cortex. *Cerebral Cortex*, *17*, 669-678.

Meng, M., Ferneyhough, E., Tong, F. (2007). Dynamics of perceptual filling-in of visual phantoms revealed by binocular rivalry. *Journal of Vision, 7*(13):8, 1-15.

Pearson, J., Clifford, C., & Tong, F. (2008). The functional impact of mental imagery on conscious perception. *Current Biology, 18,* 982-986.

Yamashita, O., Sato, M.-A., Yoshioka, T., Tong, F., Kamitani, Y. (2008). Sparse estimation automatically selects voxels relevant for the decoding of fMRI activity patterns. *Neuroimage*, 42, 1414-1429.

Brouwer, G. J., Tong, F., Hagoort, P., van Ee, R. (2009). Perceptual incongruence influences bistability and cortical activation. *PLoS ONE*, *4*(e5056), 1-14.

Dux, P. E., Tombu, M. N., Harrison, S., Rogers, B. P., Tong, F., & Marois, R. (2009). Training improves multitasking performance by increasing the speed of information processing in human prefrontal cortex. *Neuron, 63*, 127-138.

Harrison, S. A., & Tong, F. (2009). Decoding reveals the contents of visual working memory in early visual areas. *Nature, 458*, 632-635.

McKeeff T. J., McGugin, R. W., Tong, F., Gauthier I. (2010). Expertise increases the functional overlap between face and object perception. *Cognition, 117*, 355-360.

Swisher, J. D., Gatenby, J. C., Gore, J. C., Wolfe, B. A., Moon, C.-H., Kim, S.-G., & Tong, F. (2010). Multiscale pattern analysis of orientation-selective activity in the primary visual cortex. *Journal of Neuroscience, 30*, 325-330.

Genç, E., Bergmann, J., Tong, F., Blake, R., Singer, W., & Kohler, A. (2011). Callosal connections of primary visual cortex predict the spatial spreading of binocular rivalry across the visual hemifields. *Frontiers in Human Neuroscience, 5*(161), 1-12.

Jehee, J. F. M., Brady, D. K., & Tong, F. (2011). Attention improves encoding of task-relevant features in the human visual cortex. *Journal of Neuroscience*, *31*, 8210-8219.

McGugin, R. W., McKeeff T. J., Tong, F., Gauthier I. (2011). Irrelevant objects of expertise compete with faces during visual search. *Attention, Perception and Pscyhophysics*, *73*, 309-317.

Pearson, J., Rademaker, R. L., & Tong, F. (2011). Evaluating the mind's eye: The metacognition of visual imagery. *Psychological Science, 22*, 1535-1542.

Tong, F. (2011). Aligning brains and minds. *Neuron*, *72*, 199-201.

Jehee, J. F. M., Ling, S., Swisher, J. D., Tong, F. (2012). Perceptual learning selectively refines orientation representations in early visual cortex. *Journal of Neuroscience, 32,* 16747-16753.

Kietzmann, T. C., Swisher, J. D., König, P., & Tong, F. (2012). Prevalence of selectivity for mirror-symmetric views of faces in the ventral and dorsal visual pathways. *Journal of Neuroscience, 32*, 11763-11772.

Hong, S. W., Tong, F., & Seiffert, A. E. (2012). Direction-selective patterns of activity in human visual cortex suggest common neural substrates for different types of motion. *Neuropsychologia*, *50*(4):514-21.

Hong, S. W., Xu, L., & Tong, F. (2012). The hand-reversal illusion revisited. *Frontiers in Integrative Neuroscience*, 6(83), 1-6.

Rademaker, R. L., Tredway, C. H., Tong, F. (2012). Introspective judgments predict the precision and likelihood of successful maintenance of visual working memory. *Journal of Vision*, *12*(13):21, 1-13.

Swisher, J. D., Sexton, J. A., Gatenby, J. C., Gore, J. C., & Tong, F. (2012). Multishot versus single-shot pulse sequences in very high field fMRI: a comparison using retinotopic mapping. *PLoS One, 7*(4), e34626, 1-12.

Tong, F., Harrison, S., Dewey, J., & Kamitani, Y. (2012). Relationship between BOLD amplitude and pattern classification of orientation-selective activity in the human visual cortex. *Neuroimage*, *63*, 1212-1222.

Tong, F., & Pratte, M. S. (2012). Decoding patterns of human brain activity. *Annual Review of Psychology, 63*, 483-509.

Pratte, M. S., Ling, S., Swisher, J. D., & Tong, F. (2013). How attention extracts objects from noise. *Journal of Neurophysiology*, *110*(6), 1346-1356.

Tong, F. (2013). Imagery and visual working memory: one and the same? *Trends in Cognitive Sciences*, *17*(10) 489-490.

Lorenc, E. S., Pratte, M. S., Angeloni, C. F., & Tong, F. (2014). Expertise for upright faces improves the precision but not the capacity of visual working memory. *Attention, Perception, and Psychophysics*, *76(7),* 1975-1984*.*

Pratte, M. S., & Tong, F. (2014). Spatial specificity of working memory representations in the early visual cortex. *Journal of Vision*, 14(3):22, 1-12.

Poltoratski, S., & Tong, F. (2014). Hysteresis in the dynamic perception of scenes and objects. *Journal of Experimental Psychology: General*, *143*(5):1875-1892.

Cohen, E. C., & Tong, F. (2015). Neural mechanisms of object-based attention. *Cerebral Cortex*, *25*(4), 1080-1092.

Kietzmann, T. C., Poltoratski, S., König, P., Blake, R., Tong, F., & Ling, S. (2015). The occipital face area is causally involved in facial viewpoint perception. *Journal of Neuroscience, 35,* 16398-16403.

Ling, S., Pratte, M. S., & Tong, F. (2015). Attention alters orientation processing in the human lateral geniculate nucleus. *Nature Neuroscience, 18*(4), 496-498.

Pratte, M. S., Sy, J. L., Swisher, J. D., & Tong, F. (2016). Radial bias is not necessary for orientation decoding. *Neuroimage*, *127*, 23-33.

Knapen, T., Swisher, J. D., Tong, F., & Cavanagh, P. (2016). Oculomotor remapping of visual information to foveal retinotopic cortex. *Frontiers in Systems Neuroscience*, *10*(54), 1-12.

Pratte, M. S., Park, Y. P., Rademaker, R. L., & Tong, F. (2017). Accounting for stimulus-specific variation in precision reveals a discrete capacity limit in visual working memory. *Journal of Experimental Psychology: Human Perception and Performance, 43*, 6-17.

Pratte, M. S., & Tong, F. (2017). Integrating theoretical models with functional neuroimaging. *Journal of Mathematical Psychology, 76B,* 80-93.

Kietzmann, T. C., Gert, A. L., Tong, F., & König, P. (2017). Representational dynamics of facial viewpoint encoding. *Journal of Cognitive Neuroscience, 29*, 637-651.

Rademaker, R. L., van de Ven, V. G., Tong, F., & Sack, A. T. (2017). The impact of early visual cortex transcranial magnetic stimulation on visual working memory precision and guess rate. *PLoS One, 12*(4). e0175230.

Poltoratski, S., Ling, S., McCormack, D., & Tong, F. (2017). Characterizing the effects of feature salience and top-down attention in the early visual system. *Journal of Neurophysiology*, *118*(1), 564-573.

Park, Y. E., Sy, J. L., Hong, S. W., & Tong, F. (2017). Reprioritization of features of multi-dimensional objects stored in visual working memory. *Psychological Science*, *28*, 1773-1785.

Hong, S. W., & Tong, F. (2017). Neural representation of form-contingent color filling-in in the early visual cortex, *Journal of Vision, 17*(13):10, 1-10*.*

Rademaker, R. L., Park, Y. E., Sack, A. T., & Tong, F. (2018). Evidence of gradual loss of precision for simple features and complex objects in visual working memory. *Journal of Experimental Psychology: Human Perception and Performance.*

Keefe, J. M., Sy, J. L., Tong, F., & Zald, D. H. (2019). The emotional attentional blink is robust to divided attention. *Attention, Perception, & Psychophysics*, *81*, 205-216.

Andersen, L. M., Overgaard, M., Tong, F. (2019). Visual expectations change subjective experience without changing performance. *Consciousness & Cognition, 71*, 59-69.

Poltoratski, S., Maier, A., Newton, A. T., Tong, F. (2019). Figure-ground modulation in the human lateral geniculate nucleus is distinguishable from top-down attention. *Current Biology*, *29*(12), 2051-2057.

Poltoratski, & Tong, F. (2020). Resolving the spatial profile of figure enhancement in human V1 through population receptive field modeling. *Journal of Neuroscience, 40*(16) 3292-3303.

Sy, J. L., Miao, H.-Y., Marois, R., & Tong, F. (2021). Conscious perception can be both graded and discrete. *Journal of Experimental Psychology: General, 150(8), 1461-1475.*

Jang, H., & Tong, F. (2021). Convolutional neural networks trained with a developmental sequence of blurry to clear images reveal core differences between face and object processing. Journal of Vision 21(12):6, 1-18.

Jang, H., McCormack, D., & Tong, F. (2021). Noise-trained deep neural networks effectively predict human vision and its neural responses to challenging images. PLoS Biology, 19(12):e3001418, 1-27.

Daumail, L., Carlson, B. M., Mitchell, B. A., Cox, M. A., Westerberg, J. A., Johnson, C., Martin, P.R., Tong, F., Maier, A., & Dougherty, K. (2023). Rapid adaptation of primate LGN neurons to drifting grating stimulation. *Journal of Neurophysiology*, *129*(6), 1447-1467.

Wang, J., Tong, F., Joanisse, M. F., & Booth, J. R. (2023). A sculpting effect of reading on later representational quality of phonology revealed by multi-voxel pattern analysis in young children. *Brain and Language, 239*, 105252.

Coggan, D. D., & Tong, F. (2023). Spikiness and animacy as potential organizing principles of human ventral visual cortex. *Cerebral Cortex, 33*(13), 8194-8217.

Jang, H., & Tong, F. (*In press*). Improved modeling of human vision by incorporating robustness to blur in convolutional neural networks. *Nature Communications*.

MANUSCRIPTS UNDER REVIEW OR FORTHCOMING

Miao, H. Y., & Tong, F. (*Under review*). Convolutional neural network models of neuronal responses in macaque V1 reveal limited non-linear processing. *Journal of Vision*.

Tong, F. (*Invited review article for 2025*). Developing deep neural network models that capture the robustness of the human visual system. *Annual Review of Vision Science*.

BOOK CHAPTERS

Tong, F. (2005). Investigations of the neural basis of binocular rivalry. In D. Alais & R. Blake (Eds.), *Binocular rivalry and perceptual ambiguity*, Cambridge, MA: MIT Press.

Wolfe, J. M., Seiffert, A. E., & Tong, F. (2006). Perception. In E. E. Smith & S. M. Kosslyn (Eds.), *Cognitive Psychology: Mind and Brain*, Prentice Hall.

Tong, F. & Pearson, J. (2007). Vision. In Baars & Gage (Ed.) *Cognition, Brain, and Consciousness*, Academic Press, London.

Tong, F. (2018). Foundations of Vision. Lead chapter for Volume 2 of Sensation, Perception & Attention in the 5-volume edition of *The Stevens' Handbook of Experimental Psychology and Cognitive Neuroscience,* John Wixted and John Serences (Eds.).

PATENTS

Tong, F., & Jang, H. (2021). Noise-robust neural networks and methods thereof. (U.S. Patent No. 11,030,487). U.S. Patent and Trademark Office.

GRANTS FUNDED

Project Title: The neural basis of binocular rivalry and visual awareness in human
                       visual cortex
Funding Agency: J. S. McDonnell Foundation and Pew Charitable Trusts
Grant Type: McDonnell-Pew Grant in Cognitive Neuroscience
Investigator Role: PI
Dates of Funding: 09/01/99 – 05/01/03
Total Direct Costs: $150,000

Project Title: Cognitive and neural mechanisms of conflict and control
Funding Agency: National Institute of Health
Grant Type: NIH Silvio O. Conte Center Grant for Neuroscience Research
Grant Number: 5P50MH062196
Investigator Role: Co-PI
Dates of Funding: 09/22/00 – 08/31/05
Total Direct Costs: $606,628 ($936,482 with indirect costs)

Project Title: Neural mechanisms of human visual perception
Funding Agency: National Institutes of Health, National Eye Institute
Grant Type: R01 Investigator Initiated Grant Application
Grant Number: R01 EY14202-01
Investigator Role: PI
Dates of Funding: 09/15/02 – 09/15/06
Total Direct Costs: $525,000 ($815,967 with indirect costs)

Project Title: Neural representations of objects across the human visual pathway
Funding Agency: National Science Foundation
Grant Type: Cognitive Neuroscience Initiative
Grant Number: BCS-0642633
Investigator Role: Principal Investigator
Dates of Funding: 04/15/07 – 09/31/12
Total Direct Costs: $415,446 ($637,489 with indirect costs)

Project Title: Neural representation of features in the human visual cortex
Funding Agency: National Institutes of Health, National Eye Institute
Grant Type: R01 Investigator Initiated Grant Application
Grant Number: R01 EY017082
Investigator Role: PI
Dates of Funding: 09/01/07 – 08/31/13
Total Direct Costs: $1,250,000 ($1,918,750 with indirect costs)

Project Title: Integrated imaging of brain function at 7 Tesla
Funding Agency: National Institutes of Health, National Institute of Biomedical Imaging and
                       Bioengineering
Grant Type: R01 Bioengineering Research Partnerships Grant Application
Grant Number: 2R01 EB000461-07
Investigator Role: Co-PI   (PI: John Gore)
Dates of Funding: 2/01/2008 – 01/31/2013
Total Direct Costs: $3,732,345 ($5,597,738 with indirect costs)

Project Title: Advances to decode the mammalian visual pathway: Attentional mechanisms for object recognition
Funding Agency: Defense Advanced Research Projects Agency (DARPA)
Grant Type: DARPA Grant Application
Grant Number: N10AP20003
Investigator Role: PI
Dates of Funding: 03/24/2010 – 23/03/2013
Total Direct Costs: $284,109 ($444,793 with indirect costs)

Project Title: Cortical representations of visually specific information in working memory
Funding Agency: National Science Foundation
Grant Type: Cognitive Neuroscience Initiative
Grant Number: BCS-1228526
Investigator Role: PI
Dates of Funding: 09/15/2012 – 08/31/2016
Total Direct Costs: $404,037 ($613,633 with indirect costs)

Project Title: Neurodiversity Inspired Science and Engineering
PI: Keivan Stassun
Funding Agency: National Science Foundation
Grant Type: Research Traineeship Award (NRT)
Grant Number: 1922697
Investigator Role: Co-PI
Dates of Funding: 01/01/2019 - 08/01/2024
Total Award: $3,115,884

Project Title: Core grant in vision research
PI: David Calkins
Funding Agency: National Eye Institute, NIH
Grant Type: P30 core grant
Grant Number: 2P30EY008126-33
Investigator Role: Module director for computation core and in vivo imaging core
Dates of Funding: 12/15/2020 – 08/31/2024
Yearly Direct Costs: $654,067 ($785,975 with indirect costs)

Project Title: Perceptual functions of the human lateral geniculate nucleus
Funding Agency: National Institutes of Health, National Eye Institute
Grant Type: R01 Investigator Initiated Grant Application
Grant Number: 1R01EY029278
Investigator Role: PI
Dates of Funding: 09/01/2018 – 07/31/2024
Total Direct Costs: $1,000,000 ($1,533,260 with indirect costs)

Project Title: Enhancing employment for neurodiverse individuals through next-generation, AI-enabled assessments of visuospatial cognition
PI: Maithilee Kunda
Funding Agency: National Science Foundation
Grant Number: 2034013
Investigator Role: Co-PI
Dates of Funding: 09/15/2020 – 08/31/2022
Total award: $251,998

Project Title: Learning the visual and cognitive bases of lung nodule detection
Funding Agency: National Institutes of Health, National Cancer Institute
Grant Type: R01 Investigator Initiated Grant Application
Grant Number: R01CA240274
Investigator Role: PI
Dates of Funding: 12/15/2020 – 11/30/2025
Total Direct Costs: $1,174,935 ($1,820,960 with indirect costs)

Project Title: The neural basis of top-down biasing of bottom-up visual processing
PI: Peter Tse
Funding Agency: National Science Foundation
Grant Number: 2241975
Investigator Role: Co-PI
Dates of Funding: 08/01/2023 – 07/31/2026
Total Award: $699,000 (Tong subcontract, $214,812)

Project Title: Neural and computational mechanisms underlying robust object
                            recognition
Funding Agency: National Institutes of Health, National Eye Institute
Grant Type: R01 Investigator Initiated Grant Application
Grant Number: R01EY035157
Investigator Role: PI
Dates of Funding: 08/01/2023 – 06/30/2027
Total Direct Costs: $1,021,406 ($1,589,615 with indirect costs)

INVITED TALKS AND COLLOQUIA

1998 June	Invited speaker, McDonnell-Pew Annual Meeting in Cognitive Neuroscience, Montreal, Canada
1998 November	Beckman Laboratories, California Institute of Technology, Pasadena, CA
1999 October	Cognitive Forum, UCLA, Los Angeles, CA
2000 December	NEC Research Institute, Princeton, NJ
2001 February	Vision Sciences Series, Harvard University, Cambridge, MA
2001 February	Brain and Cognitive Sciences Seminar, MIT, Cambridge, MA
2001 June	Special Symposium on *The Neural Correlates of Awareness*, Cambridge Medical Research Council, Cambridge, UK
2002 April	Chair and speaker of *Symposium on The Role of V1 in Human Visual Awareness*, Cognitive Neuroscience Society, San Francisco, CA
2002 June	Invited speaker, Workshop on Binocular Rivalry and Perceptual Ambiguity, San Miniato, Italy
2002 August	Vision Sciences Laboratory*,* Harvard University, Cambridge, MA
2003 April	Departmental Colloquium, McMaster University, Hamilton, Canada
2003 May	Invited speaker, *Time Colloquium* for Princeton Alumni, Washington DC
2003 June	Invited speaker, Association for the Scientific Study of Consciousness, Memphis, TN
2004 March	Departmental Colloquium, University of Pennsylvania, Philadelphia, PA
2004 March	Departmental Colloquium, John Hopkins University, Baltimore, MD

2004 April	Satellite Symposium on *Visual Attention and Awareness*, Cognitive Neuroscience Society, San Francisco, CA
2004 September	Invited speaker, Opening of new MRI center, University of Rochester
2004 October	Departmental Colloquium, Psychology Dept, Cornell University
2004 November	Cognitive Neuroscience Seminar, California Institute of Technology
2005 June	Visual Neuroscience Seminar, Salk Institute
2005 June	Invited speaker, Neurophilosophy conference, California Institute of Technology
2005 December	Invited Tutorial Speaker, Neural Information Processing Systems Conference, Vancouver, Canada
2006 January	Workshop on Brain and Cognition, Taiwan ministry of education, (Invited speakers: Shinsuke Shimojo, Frank Tong, Anne Treisman)
2006 May	Departmental Colloquium, Department of Neurobiology and Anatomy, University of Texas Medical School
2006 June	Speaker for Symposium on *Imaging Consciousness: New Methods and Approaches*, Human Brain Mapping Conference, Florence, Italy
2006 June	Dartmouth Summer Institute in Cognitive Neuroscience, Hanover, NH
2006 November	Departmental Colloquium, Psychology Dept, University of Louisville
2006 April	Colloquium, Center for Cognitive Sciences, University of Minnesota
2007 May	Invited speaker, International Conference on Cognitive and Neural Systems, Boston University (Organizer: Prof. Stephen Grossberg)
2007 June	Invited speaker, Centre for Vision Research International Conference, York University (Organizer: Prof. Hugh Wilson)
2007 October	Colloquium, Cognitive Science, University of Arizona
2007 November	Vision Sciences Seminar, Harvard University
2007 November	Departmental Colloquium, Psychology Dept, Boston University
2008 March	Mind, Brain and Behavior Seminar, Harvard University
2008 May	Invited speaker, Symposium of the Center for Visual Science, Rochester University
2008 June	Invited speaker, Computational Neuroscience of Vision course, Cold Spring Harbor
2008 July	Departmental Colloquium, Psychology Dept, University College London
2008 September	Departmental Colloquium, Psychological and Brain Sciences Dept, Dartmouth University
2009 April	Colloquium, Center for Vision Research, York University, Canada
2009 June	Panel speaker, World Science Festival, New York, NY
2010 April	Colloquium, Center for Brain Science, Harvard University
2010 April	Departmental Colloquium, Brown University
2010 April	NSF Workshop on Hybrid Neuro-Computer Vision, Columbia University
2010 June	Tutorial on fMRI Decoding, Association for the Scientific Study of Consciousness, Toronto, Canada
2010 June	Symposium on Brain Decoding, Human Brain Mapping Conference, Barcelona, Spain
2010 Aug	Panelist for Board on Behavioral, Cognitive, and Sensory Science, National Academy of Sciences

2010 Sept	Invited Speaker, Opening reception of the Spinoza Neuroimaging Center, University of Amsterdam
2010 Oct	Departmental Colloquium, Psychology Dept, Queen's University, Canada
2010 Dec	Invited speaker, symposium on Neurotechniques, Italian Academy, NYC
2011 Feb	Departmental Colloquium, Cambridge University, UK
2011 Feb	Invited Talk, University College London, UK
2011 Apr	Departmental Colloquium, UC Berkeley
2011 Sept	Departmental Colloquium, Johns Hopkins University
2011 Oct	Invited Talk, Workshop on High and Ultra-high Field Imaging, University of Minnesota
2012 Feb	Speaker, Computational and Systems Neuroscience Workshop, Snowbird, Utah
2012 Apr	Departmental Colloquium, UC Davis
2012 Aug	Invited speaker, Visual Working Memory Conference, Portland, OR
2012 Sept	Invited speaker, MacArthur Network on Law and Neuroscience meeting, Cambridge, MA
2012 Dec	Departmental Colloquium, UC San Diego
2013 April	Symposium organizer, fMRI pattern analysis, Cognitive Neuroscience, Society, San Francisco, CA
2013 May	Invited speaker, Concepts, Actions, and Objects Workshop, Rovereto, Italy
2013 May	Departmental Colloquium, York University, Canada
2013 Nov	Speaker, University Seminar Series on Visual Perception, Columbia Univ
2014 July	Invited speaker, International workshop on neuro-cognitive mechanisms of conscious and unconscious visual perception, Delmenhorst, Germany
2015 Feb	Colloquium speaker, Princeton Neuroscience Institute
2015 April	Invited speaker, McGovern Institute, MIT
2016 May	Colloquium speaker, Psychology Department, Stanford University
2016 June	Invited Keynote Speaker, Association for Scientific Study of Consciousness
2016 Dec	Colloquium speaker, Psychology Department, Cornell University
2017 Feb	Colloquium speaker, Psychology Department, York University
2017 April	Invited speaker, Harvard Vision Lab, Harvard University
2017 June	Colloquium speaker, Psychology Department, Beijing University
2017 Nov	Colloquium speaker, Brain Institute, Florida Atlantic University
2018 May	Colloquium speaker, Psychological Sciences Department, Brown University
2019 April	Colloquium speaker, Psychology Department, Univ of Wisconsin Madison
2020 Oct	Invited speaker, Electrical and Computer Engineering, NC State University
2020 Nov	Keynote speaker, 28th Object Perception and Memory Conference
2021 Mar	Colloquium speaker, Psychology Department, Northeastern University
2022 Nov	Invited virtual talk, Georgia Tech Neuro Seminar, Psychology Department, Georgia Institute of Technology
2023 April	Invited speaker, Dept. of Psychological & Brain Sciences, Boston Univ
2023 August	Invited speaker, 60th Anniversary Conference, Smith-Kettlewell Eye Research Institute
2023 October	Colloquium speaker, SUNY Optometry

2023 December	Keynote speaker, Center for Brain Imaging, Ohio State University
2024 February	Invited speaker, Neuroscience Institute, UC Berkeley
2024 May	Symposium speaker on deep neural network models, Vision Sciences Society Conference
2024 August	Conference organizer, Medical Image Perception Society Biennial Meeting, Vanderbilt University

PROFESSIONAL ACTIVITIES AND MEMBERSHIPS

1997 – 1998	*Organizer* of the Vision Science Seminar, Harvard University
2001 Fall	*Organizer* of the Cognitive Seminar Series, Princeton University
2002 April	*Chair* of Symposium on "The Role of V1 in Human Visual Awareness", Cognitive Neuroscience Society, San Francisco, CA
2003 – 2004	*Ad Hoc* Study Section Member, National Institutes of Health, Sensory, Motor, and Cognitive Neuroscience (ZRG1 F02B)
2004 – 2005	*Ad Hoc* Study Section Member, National Institutes of Health, Cognitive Neuroscience Study Section (COG)
2007	*Ad Hoc* Study Section Member, National Institutes of Health, Special Emphasis Panel, Sensorimotor Integration Study Section
2010 Aug	Invited panel member for National Research Council, Board of Behavioral, Cognitive, and Sensory Sciences
2011 May	Invited panel member for national review committee at National Eye Institute
2012 June	*Ad Hoc* Study Section Member, National Institutes of Health, Sensory, Perceptual and Cognitive Neuroscience (SPC) Study Section
2013 – 2014	*Ad Hoc* Study Section Member, National Institutes of Health, ZRG1 IFCN-Q
2014	*Ad Hoc* Study Section Member, National Institutes of Health, K99 NIH/ NEI ZEY1VSN03 review panel
2015 June	*Ad Hoc* Study Section Member, National Institutes of Health, Sensory, Perceptual and Cognitive Processes (SPC) Panel
2012 – 2016	Board member, Board of Directors, *Vision Sciences Society*
2013 – 2017	Member of Editorial Committee for the *Annual Review of Psychology*
2016 – present	Member of the Editorial Board for *PLOS Biology*
2016 – present	Associate Editor, *Cognitive Neuroscience*
2016 Oct	*Ad Hoc* Study Section Member, National Institutes of Health, Sensory, Perceptual and Cognitive Processes (SPC) Panel
2018 June	Panelist for Neural and Cognitive Systems, National Science Foundation
2020	Member of the Vision Sciences Society Young Investigator Award Committee
2021 Jan	Ad Hoc Reviewer for NIMH Board of Scientific Counselors
2021	Chair of the Vision Sciences Society Young Investigator Award Committee
2021 – 2025	Member, National Institutes of Health, Neuroscience of Basic Visual Processes Study Section (NBVP)
2024	Primary organizer of the Medical Image Perception Society Biennial Meeting, to be held at Vanderbilt University

Professional Memberships

Association for Psychological Science · Medical Image Perception Society
Association for Scientific Study of Consciousness · Society for Neuroscience
Cognitive Computational Neuroscience Society · Vision Sciences Society

Department and University Service

2002 – 2003	Member of Institutional Review Board, Princeton University
2006 – present	Member of steering committees for 3T MRI and 7T MRI, Vanderbilt University Institute for Imaging Science
2007 – present	Psychology Major Advisor, Vanderbilt University, Vanderbilt University
2008 – 2009	Chair of search committee for assistant professor position in social neuroscience
2009 – 2013	Computer module director for Vanderbilt Vision Research Center
2012 – present	Member of steering committee, Vanderbilt Brain Institute
2014	Chair of search committee for assistant professor position in cognitive neuroscience
2014 – present	Member of the Vanderbilt University Conflict of Interest and Commitment Committee
2018 – present	Computer module director for Vanderbilt Vision Research Center
2019 – present	In vivo imaging module director for Vanderbilt Vision Research Center
2019 – present	Member of Psychology Department's Equity, Diversity, and Inclusion Committee
2019 – 2020	Chair of search committee for Assistant Professor position in neuroscience, across Psychology and Vanderbilt Brain Institute
2022 – 2023	Member of search committee for Assistant Professor in Clinical Psychology
2023 – 2024	Member of A&S Senior Advisory Review Committee on Tenure and Promotion, Vanderbilt University

Ad Hoc Reviewing

General Science Journals
Current Biology
Nature
Nature Communications
PLOS: Biology
PNAS
Science

Neuroscience and Neuroimaging Journals
Cerebral Cortex
Cognitive Neuropsychology
Journal of Cognitive Neuroscience
Journal of Neurophysiology
Journal of Neuroscience
Nature Neuroscience
Nature Reviews Neuroscience
Neuroimage
Neuron

Psychology Journals
Cognition
Journal of Experimental Psychology:
Human Perception and Performance
Journal of Vision
Journal of Personality and Social Psychology
Perception
Perception and Psychophysics
Psychological Science
Trends in Cognitive Science
Vision Research

Organizations and Funding Agencies
MacArthur Foundation
Organization for Human Brain Mapping
National Science Foundation
National Institutes of Health
Wellcome Trust

TEACHING AND ADVISING

2001 spring	*Graduate Quantitative Methods for Psychology*, Princeton University
2001 – 2003	*Cognitive Psychology*, Princeton University
2002 fall	*Graduate Proseminar in Cognitive Psychology*, Princeton University
2002 – 2003	Freshman and Sophomore Faculty Advisor, Mathey College, Princeton University
2004 fall	*Vision, Brain, and Consciousness*, Vanderbilt University
2004 – present	*Mind and Brain*, Vanderbilt University
2006 – 2019	*Social Cognition and Neuroscience*, Vanderbilt University
2019 – present	*The Visual System*, Vanderbilt University
2011s, 2013 fall	Honors seminar: *Thinking like a neuroscientist*, Vanderbilt University
2014 fall, 2019	Advanced graduate course in *Vision Science*, Vanderbilt University
2020 fall, 2023	*Computational Neuroscience of Human Vision*, Vanderbilt University

Graduate Student Advisees

Ming Meng. PhD received in May 2006, Princeton University.
Thesis title: Neural mechanisms underlying rivalry, perceptual filling-in, and their interactions
Current position: Professor, Psychology, South China Normal University, Guangzhou, China

Thomas McKeeff, PhD received in May 2009, Princeton University
Thesis title: Temporal limitations of visual object processing
Current positions: Consultant, Ab Initio, Lecturer, Rhode Island School of Design

Tim Kietzmann (external advisee), PhD received in July 2014, University of Osnabruck
Thesis title: Aspects of object recognition: Sampling, invariance and plasticity
Current position: Professor, University of Osnabruck

Rosanne Rademaker, visiting Master's student, Maastricht University
Thesis title: Picture perfect: The training of visual imagery
Current position: Max Planck research group leader, Ernst Strüngmann Institute

Young Eun Park, PhD received in 2017, Vanderbilt University
Thesis title: The role of stimulus form in visual working memory for orientation
Current position: Senior Analyst, Zendesk

Sonia Poltoratski. PhD received in 2017, Vanderbilt University
Thesis title: Contextual effects in the early visual system and their modulation by attention
Current position: Senior Research Scientist, Perceptive Automata

Hojin Jang PhD received in 2021, Vanderbilt University
Thesis title: Exploring the robust nature of human visual object recognition through comparisons with convolutional neural networks
Current position: Postdoctoral fellow, Vanderbilt University

Huiyuan Miao (current advisee), Vanderbilt University
Proposed thesis title: Investigating the neurocomputational basis of orientation-tuned surround suppression

Loic Daumail (current advisee), Vanderbilt University

Lasya Pidaprthi (current advisee, 2nd year), Vanderbilt University

Ikhwan Jeon (current advisee, 1st year), Vanderbilt University

Postdoctoral Fellows

Yukiyasu Kamitani (2003-2004), supported by Japan Society Promotion of Science Grant
Current position: Head of Department of Neuroinformatics, ATR Computational Neuroscience Laboratories; Professor, Kyoto University

Holger Awater (2003-2005)
Current position: Head of Global Brand Team, Bayer

Joel Pearson (2006-2008), supported by CJ Martin Postdoctoral Fellowship
Current position: Professor, University of New South Wales, Sydney, Australia

Janneke Jehee (2007-2010), supported by Rubicon Fellowship from the Netherlands
Current position: Principal Investigator, Donders Institute, the Netherlands.
Recipient of the *Young Investigator Award* (2016), Vision Sciences Society

Sang Wook Hong (2009-2011), supported by NIH ARRA grant supplement
Current position: Associate Professor, Florida Atlantic University

Jascha Swisher (2007-2012), supported by an NRSA F32 fellowship
Current position: Technical Program Manager, North Carolina State University

Elias Cohen (2008-2013)
Current position: Assistant Vice Provost for Institutional Research and Effectiveness
Oregon Health & Science University

Samuel Ling (2010-2013), NRSA postdoctoral fellow
Current position: Associate Professor, Boston University

Michael Pratte (2010-2015), postdoctoral fellow, supported by NRSA F32 fellowship
Current position: Associate Professor, Mississippi State University

Jocelyn Sy (2011-2017), postdoctoral fellow
Current position: Senior Quantitative UX Researcher, Google

David Coggan (2019-present), postdoctoral fellow

Connor Parde (2023-present), postdoctoral fellow

Full-Time Research Assistants (BA)

Karla Evans (2000-2002), PhD from Princeton U, now *Lecturer* at University of York, UK

David Remus (2002-2004), PhD recipient, Stanford University, now Senior Quantitative User Experience Researcher, Google

Emma Ferneyhough (2004-2006), PhD recipient, New York University, now Senior Software Engineer, Stitch Fix

Benjamin Wolfe (2008-2010), PhD from UC Berkeley, now Assistant Professor, University of Toronto

Elizabeth Lorenc (2010-2012), PhD, UC Berkeley, now Staff Scientist, Brown University

Christopher Angeloni (2012-2014), PhD, Univ of Pennsylvania, Postdoc at Northwestern U

Devin McCormack (2014-2017), now Product Analyst, Zendesk

Kaylee Bashor (2020-2022), now Geriatric Care Manager, LionHeart Eldercare

Zoe Armstrong, (2022-present)

Undergraduate Advisees

Amy Wong (2000-2001), Princeton U, subsequently MD recipient, UC San Francisco
Thesis title: Human brain activity during attempts to control perception of ambiguous figures: An fMRI study. Awarded the *Class of 1943 Senior Thesis Prize in Neuroscience*, Department of Psychology, Princeton University.

Sharon Fox (2001-2002), Princeton U, subsequently MD recipient, Harvard Medical School
Thesis title: Caravaggio in a new light: theories of light in his paintings and the scientific basis for its emotive effects. Awarded the *George A. Miller Senior Thesis Prize in Cognitive Science*, Princeton University.

David Kim (2002-2004), Princeton U, now Corporate Counsel at Amazon
Thesis title: Classification of subordinate-level objects using distributed representations in human occipital-temporal cortex. Awarded the *Class of 1943 Senior Thesis Prize in Neuroscience*, Department of Psychology, Princeton University.

Caroline Tredway (2009-2010), Vanderbilt, MD recipient, Emory Univ School of Medicine
Research topic: Rademaker, R. L., Tredway, C. H., Tong, F. (2012). Introspective judgments predict the precision and likelihood of successful maintenance of visual working memory. *Journal of Vision*, *12*(13):21, 1-13.

Cameron Neely (2010-2011), Vanderbilt, MD recipient, Univ of Toledo College of Medicine
Research topic: Perception of human faces in complex natural scenes
Recipient of the Vanderbilt Undergraduate Summer Research Program Fellowship

Alexander Lubinski (2013), Vanderbilt, MD recipient, University of Florida
Research topic: Simulation analyses comparing fMRI decoding and forward-encoding models
Recipient of the Vanderbilt Undergraduate Summer Research Program Fellowship

William Ju (2016), Software Engineer, The Home Depot
Research topic: Development of web-based interface for large-scale online studies of visual working memory
Recipient of the Vanderbilt Undergraduate Summer Research Program Fellowship

Haley Frey (2021), PhD student, UC Berkeley
Thesis title: The role of background information in object recognition by humans and convolutional neural networks
Highest honors, Vanderbilt Undergraduate Neuroscience Program