

Professor Paul Edward Downing

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Updated: Sept 2011

Academic Positions

- 2010 - Professor of Cognitive Neuroscience, Bangor University
- 2006 - 2010 Reader, Bangor University
- 2005 - 2006 Senior Lecturer, Bangor University
- 2000 - 2005 Lecturer, Bangor University

Education & Training

- 1998 - 2000 Post-doctoral fellow, Brain & Cognitive Sciences, MIT
Supervisor: Nancy Kanwisher
- 1998 Ph.D in Psychology, Princeton University
Supervisor: Anne Treisman
- 1992 B.S. *cum laude* in Cognitive Science, UCLA

Awards and Fellowships

- 1994 - 1997 NSF Graduate Research Fellowship
- 1995 Fellow, McDonnell Summer Institute in Cognitive Neuroscience

Grants

Principal Investigator

- 2009-2011 Leverhulme Trust (£101,333)
“TMS and fMRI investigations of the action perception brain network” (with Rafal, Tipper, and Giese)
- 2005 - 2008 BBSRC Research Grant (£182,687)
“Investigations of the neural basis of ‘social vision’”
- 2002 Royal Society Research Grant (£6,184)
“ERP studies of human visual cognition” (with G. Thierry)
- 2001 - 2003 BBSRC Research Grant (£74,284)
"Guidance of Selective Attention by Working Memory"
- 2000, 2001, 2004 Royal Society Conference Travel Awards (~ £500 each)

Co-investigator

- 2011-2014 (PI: Kim Graham, Cardiff) BBSRC (£806,721)
“Differentiating the contributions of domain-specific regions within the medial temporal lobe and extrastriate cortex to perception
- 2008-2011 (PI: Steve Tipper) ESRC (£384,859)
“Mirror systems’ and the perception and generation of action: multivariate fMRI studies”
- 2007-10 Several WICN-funded pilot MRI projects (with various internal and external collaborators)
- 2007-8 (co-I with Stan Colcombe) Unilever Food and Health Research Institute “Behavioural and fMRI test of the effects of combined theanine/caffeine on attentional functions and resting-state brain activity” (£24,000 direct costs)
- 2004 (co-author with Bob Rafal, Fergus Lowe, Steve Tipper)
Wolfson Foundation (£1.25 million)
“Proposal to Establish an Institute for Clinical and Cognitive Neuroscience”
- 2004 (PI: Bob Rafal) Leverhulme Trust (£28,989)
“fMRI guided 1Hz TMS of human oculomotor cortex

Service

- Bangor Imaging Group coordinator 2004 - 2008
Organised the ~weekly imaging group meetings, consisting of internal presentations, technical discussions, outside speakers, journal clubs, and policy discussions.
- School Ethics Committee Sept 2005 - Jan 2008
Attended general and special meetings of the School ethics committee; reviewed internal ethics applications.
- 3T MRI Procurement Group 2006
This committee was tasked with selecting a vendor for the 3T MRI system. I was closely involved in defining the technical specifications and in making site visits to compare the major vendors' offerings. This group also advised on many details of the design and layout of the scanner suite in Brigantia.
- Co-Director Bangor Imaging Unit 2007
As co-Director I was involved in managing the handover of the MRI system from the manufacturer, development of the internal operating procedures (including financial arrangements), co-ordinating the bedding-in period, recruitment of the MR Physicist and Image Analyst, and co-organising the opening ceremony.
- Member, Bangor Imaging Unit Steering Group 2007 - present
As a member of this group I am involved in overseeing the operation of the MRI system.
- Deputy Head of School (Research) Jan 2008 - Apr 2010
My remit in this role included: membership of School Executive; chairing School research committee; facilitation of grant capture; management of School research infrastructure funds; oversight of shared research facilities, of School PhD policies, and of School relationship to WICN.
- Cognitive Colloquium Organiser 2010 - present
Managing weekly cognitive colloquium series – internal and external speakers.
- Deputy Head of College (Research) Aug 2008 – present
My main priorities include: preparation and coordination of response to Research Excellence Framework; representation at University level research strategy group; facilitating large cross-College grant submissions
- University IT strategy task group Sept 2011 -

Summary of Teaching & Supervision Activities

Over the past 11 years, I have lectured on:

- Cognition (u.g. year 1 & 2): thinking, memory, problem solving, rationality, etc.
- Neuropsychology (u.g. year 2): vision, action, emotion, frontal cortex, etc.
- Human Memory (u.g. year 2): basic and applied psychological studies of human memory
- Cognitive Neuroscience (u.g. year 3): basic fMRI methods and applications
- Cogn. & Percep. (MSc): led group seminar on 'current issues' in cognitive neuroscience

I have been Module Organiser for modules at year 1, 2, and MSc levels.

I have supervised 53 final undergraduate thesis projects (5 in progress) and 13 MSc thesis projects (2 in progress).

I have 2 PhD students:

- Nikolaas Oosterhof (from October 2008)
- John Kontaris (from October 2009)

Former PhD students:

- Annie Chan: fMRI studies of ventral stream organisation (successful viva Feb 2007; now postdoc at NIMH)
- India Morrison: fMRI studies of empathy responses in anterior cingulate (successful viva August 2006; now Lecturer at Goteborg, Sweden)
- Marius Peelen: fMRI studies of the perception of bodies and faces (successful viva October 2006; now Asst. Prof at CIMEC, Rovereto)
- John Taylor: Neural representation of bodies in the brain (successful viva July 2010; now postdoc at Cardiff University)

I have served as external PhD examiner for U. Cartwright-Finch (UCL Psych), A. Myers (U. Surrey), B. Roulston (UCL Anatomy), D. Pitcher (UCL-ICN), D. Mitchell (MRC-CBU), K. Cohen Kadosh (Birkbeck), J-I. Kim (U. Birmingham), and T. Dekker (Birkbeck).

Editorial Activities

I have reviewed manuscripts, grants, or fellowships for:

BBSRC, BPS, Brain, Brain and Cognition, Brain Research, British Journal of Psychology, Cerebral Cortex, Cognition, Cognitive Brain Research, Cognitive Neuropsychology, Current Biology, EPSRC, ESRC, European Journal of Cognitive Psychology, Experimental Brain Research, Israel Science Foundation, JEP: General, JEP:LMC, JEP:HPP, Journal of the International Neuropsychological Society, Journal of Neurophysiology, Journal of Neuroscience, Journal of Cognitive Neuroscience, Journal of Vision, Memory and Cognition, National Science Foundation, Nature, Nature Neuroscience, Neuroimage, Neuron, Neuropsychologia, Perception, Perception and Psychophysics, PLOS Biology, PNAS, Psychological Science, Psychonomic Bulletin and Review, Psychophysiology, Quarterly Journal of Experimental Psychology, Royal Society, Science, Social Neuroscience, Swiss NSF, Vision Research, Visual Cognition, Wellcome Trust

Year 2008 reviews: Cerebral Cortex, Cognition, Neuroimage (x6), J. Vision (x2), Science (x2), JEP:HPP, J. Neurophys, J. Neurosci (x4), J. Cog. Neuro (x2), Neuron (x2), Neuroscience and

Biobehavioural Reviews, Neuropsychologia, ESRC, BBSRC, Israel Science Foundation, NSF, KU Leuven, Wellcome Trust

Publications (2096 Web of Science citations as of June 2011) h index = 24

Kontaris I, Downing P. (in press). Reflections on the hand: the use of a mirror highlights the contributions of perceived and interpreted representations in the rubber hand illusion. Perception.

Linden D, Oosterhof N, Klein C, Downing P (in press). Mapping brain activation and information during category-specific visual working memory, Journal of Neurophysiology.

Taylor J, Downing P. (2011) Division of labor between lateral and ventral extrastriate representations of faces, bodies, and objects. Journal of Cognitive Neuroscience, 23, 4122-37.

Downing P, Peelen M (2011). The role of occipitotemporal body-selective regions in person perception. Discussion target article for Cognitive Neuroscience, 2(3-4), 186-203.

Wiggett A, Downing P. (2011) Representation of action in occipito-temporal cortex. Journal of Cognitive Neuroscience, 23, 1765-80.

Chan AY, Downing PE (2011). Faces and Eyes in Human Lateral Prefrontal Cortex. Front. Hum. Neurosci. 5:51.

Oosterhof N, Wiestler T, Downing P, Diedrichsen J. (2011) A comparison of volume-based and surface-based multi-voxel pattern analysis. Neuroimage, 56, 593-600.

Wiggett A, Hudson M, Tipper S, Downing P. (2011) Learning associations between action and perception: effects of incompatible training on body part and spatial priming. Brain and Cognition, 76, 87-96.

(3) Oosterhof N, Wiggett A, Diedrichsen J, Tipper S, Downing P. (2010) Surface-based information mapping reveals crossmodal vision-action representations in human parietal and occipitotemporal cortex. Journal of Neurophysiology, 104(2), 1077-89.

Peelen M, Rogers J, Wing A, Downing P, Bracewell M. (2010) Unitary haptic perception: Integrating moving tactile inputs from anatomically adjacent and non-adjacent digits. Experimental Brain Research, 204(3), 457-64.

Taylor J, Roberts M, Downing P, Thierry G. (2010) Functional characterization of the extrastriate body area based on the N1 ERP component. Brain and Cognition, 73(3), 153-9.

Piech R, Lewis J, Parkinson C, Owen A, Roberts A, Downing P, Parkinson J. (2010) Neural correlates of affective influence on choice. Brain and Cognition, 72, 282-288.

(1) Taylor J, Wiggett A, Downing P. (2010) fMRI-adaptation studies of viewpoint tuning in the extrastriate and fusiform body areas. Journal of Neurophysiology, 103, 1467-1477.

(2) Mundy M, Honey R, Downing P, Wise R, Graham K, Dwyer D (2009). Material-independent and material-specific activation in fMRI after perceptual learning. Neuroreport, 20, 1397-1401.

- (2) Wiggett A, Pritchard I, Downing P (2009). Animate and inanimate objects in human visual cortex: evidence for task-independent category effects. Neuropsychologia, 47, 3111-3117.
- (4) Kontaris J, Wiggett A, Downing P. (2009) Dissociation of extrastriate body- and biological-motion selective areas by manipulation of visual-motor congruency. Neuropsychologia, 47, 3118-3124.
- (5) Piech R, Lewis J, C. Parkinson C, Owen A, Roberts A, Downing P, Parkinson J. (2009) Neural correlates of appetite and hunger-related evaluative judgments. PLoS ONE, 4 (8): e6581.
- (78) Peelen MV, Downing PE (2007). The neural basis of visual body perception. Nature Reviews Neuroscience, 8, 636-648. *This paper was highlighted in "Nature Milestones":* http://www.nature.com/milestones/milespin/library/mag_res_imaging/index.html
- (45) Taylor J, Wiggett A, Downing P (2007). Functional MRI analysis of body and body part representations in the extrastriate and fusiform body areas. J Neurophysiology, 98(3), 1626-33.
- (23) Morrison I, Downing P (2007). Organization of felt and seen pain responses in anterior cingulate cortex. Neuroimage, 37(2), 642-51.
- (29) Morrison I, Peelen M, Downing P (2007). The sight of others' pain modulates motor processing in human cingulate cortex. Cerebral Cortex, 17(9), 2214-22.
- (3) Morrison I, Poliakoff E, Gordon L, Downing P (2007). Response-specific effects of pain observation on motor behaviour. Cognition, 104(2), 407-16.
- (51) Thierry G, Martin C, Downing P, Pegna A (2007). Controlling for inter-stimulus perceptual variance abolishes N170 face-selectivity. Nature Neuroscience, 10(4), 505-11.
- (55) Downing P, Wiggett A, Peelen M (2007). fMRI investigation of overlapping lateral occipitotemporal activations using multi-voxel pattern analysis. Journal of Neuroscience, 27, 226-33.
- (30) Thierry G, Pegna AJ, Dodds CM, Roberts MV, Basan S, Downing PE. (2006). An event-related potential component sensitive to images of the human body. Neuroimage 32, 871-9.
- (104) Downing, P., Chan, A., Peelen, M., Dodds, C., & Kanwisher, N. (2006). Domain specificity in visual cortex. Cerebral Cortex 16, 1453-61.
- (27) Downing P, Peelen M, Wiggett A, Tew B (2006). The role of the extrastriate body area in action perception. Social Neuroscience 1, 52-62.
- (96) Peelen, M., Wiggett, A., Downing, P. (2006). Patterns of fMRI activity dissociate overlapping functional brain areas that respond to biological motion. Neuron 49, 815-822.
- (3) Ward, R., Danziger, S., Quirk, R.T., Goodson, L., & Downing, P. (2005) Suppression of involuntary spatial response activation requires selective attention. Visual Cognition 12, 376-394.
- (33) Peelen, M. & Downing, P. (2005). "Is the extrastriate body area involved in motor actions?" Nature Neuroscience, 8(2), 125.

- (49) Peelen MV, Downing PE. (2005) Within-subject reproducibility of category-specific visual activation with functional MRI. Human Brain Mapping 25:402-8.
- (119) Peelen, M.V., & Downing, P.E. (2005). Selectivity for the human body in the fusiform gyrus. Journal of Neurophysiology 93, 603-608.
- (44) Chan, A. W-Y., Peelen, M., Downing, P. (2004) The effect of viewpoint on body representation in the extrastriate body area. Neuroreport, 15, 2407-2410.
- (36) Downing, P. & Dodds, C. (2004). Competition in visual working memory for control of search. Visual Cognition, 11(6), 689-704.
- (29) Downing, P., Bray, D., Rogers, J., & Childs, C. (2004). Bodies capture attention when nothing is expected. Cognition, 93, B27-B38.
- (24) Downing, P., Dodds, C.M., & Bray, D. (2004). Why does the gaze of others direct visual attention? Visual Cognition, 11, 71-79.
- (121) Epstein, R., Graham, K.S. & Downing, P.E. (2003). Viewpoint-specific scene representations in human parahippocampal cortex. Neuron, 37:865-876.
- (470) Downing, P.E., Jiang, Y., Shuman, M., & Kanwisher, N. (2001). A cortical area selective for visual processing of the human body. Science, 293, 2470-2473.
- (39) Downing, P., Liu, L., Kanwisher, N. (2001) Testing cognitive models of visual attention with fMRI and MEG. Neuropsychologia, 39 (12), 1329-42.
- (118) Downing, P.E. (2000). Interactions between visual working memory and selective attention. Psychological Science, 11, 467-473.
- (317) O'Craven, K.M., Downing, P.E., & Kanwisher, N. (1999). fMRI evidence for objects as the units of attentional selection. Nature, 401, 584-587.
- (47) Downing, P., & Treisman, A.M. (1997). The line-motion illusion: Attention or impletion? Journal of Experimental Psychology: Human Perception and Performance, 23, 768-779.
- (47) Wharton, C.M., Holyoak, K.J., Downing, P.E., Lange, T.L., Wickens, T.D., Melz, E.R. (1994). Below the surface: Analogical similarity and retrieval competition in reminding. Cognitive Psychology, 26, 64-101.

Comments

- Downing, PE (2009). Visual neuroscience: a hat-trick for modularity. Current Biology, 19, R160-2.
- (4) Wiggett AJ, Downing PE (2008). The face network: Overextended? (Comment on: "Let's face it: It's a cortical network" by Almit Ishai). Neuroimage, 40, 420-22.
- Downing PE (2007). Face perception: broken into parts. "Dispatch" comment for Current Biology, 17, 888-9.

(25) Peelen M, Downing P (2007). Using multi-voxel pattern analysis of fMRI data to interpret overlapping functional activations. Trends in Cognitive Sciences, 11, 4-5.

(2) Kanwisher, N., & Downing, P. (1998). Separating the wheat from the chaff. "Perspectives" comment for Science, 282 (5386), 57-8.

(11) Downing, P., & Kanwisher, N. (1995). Types and tokens unscathed: A reply to Whittlesea, Dorken, and Podrouzek (1994) and Whittlesea and Podrouzek (1994). Journal of Experimental Psychology: Learning, Memory, and Cognition, 21, 1698-1702.

Book Chapter

Kanwisher, N., Downing, P., Epstein, R., & Kourtzi, Z. (2001). Functional Neuroimaging of Human Visual Recognition. In R Cabeza and A Kingstone (Eds.), The Handbook on Functional Neuroimaging. pg 109-152. Cambridge: MIT press.

Submitted or in revision

Oosterhof N, Tipper S, Downing P. Mirror neurons in human ventral premotor cortex: A matter of perspective. Submitted, *JoCN*.

Wiggett A, Hudson M, Clifford A, Tipper S, Downing P. Doing, seeing, or both: effects of learning condition on subsequent action perception. Submitted, *Social Neuroscience*.

Mundy M, Downing P, Graham K. Extrastriate cortex and medial temporal lobe regions respond differentially to visual feature overlap within preferred stimulus category. Submitted, *Neuropsychologia*.

Mundy M, Downing P, Honey R, Dwyer D, Singh K, Graham K. Elucidating the neural correlates of perceptual learning in the visual cortex. In preparation.

Oosterhof N, Tipper S, Downing P. The role of imagery in visuo-motor action representations. In preparation.

Invited Talks

Departmental seminars

University of Regensburg, Germany, June 2010.
Birkbeck College, UCL, November 2009.
Swansea University, March 2009.
Brunel University, November 2008.
University of Birmingham, May 2008.
Institute of Cognitive Neuroscience, UCL, April 2008.
Nottingham University, November 2007.
Warwick University, March 2007.
FIL, UCL, November 2006.
Univ. Pennsylvania, September 2006.
Princeton University, September 2006.
Cardiff University, June 2006.
MRC-CBU, November 2004.
Reading University, February 2004.
Durham University, February 2004.
Univ. British Columbia, January 2004.
Aston University, June 2003.
St. Andrews, April 2003.
Cardiff University, October 2002.
Sheffield University, February 2002.
University College London, March 2001.
UCLA, February 2000.
Cambridge MRC-CBU, August 1999.

Other invited talks

Speaker at Concepts, Actions, and Objects conference (CAOS), Rovereto, May 2011.
Speaker at IUAP symposium on the inferior temporal cortex, Leuven, December 2010.
Speaker at Festschrift for Prof Anne Treisman, Princeton, May 2008.
Speaker at Autumn School in Cognitive Neuroscience, Oxford, September 2005.
Speaker at Workshop on Domain Specificity in honour of N. Kanwisher, ICN, April 2005.
Speaker at “fMRI in Vision and Action Research” workshop, Royal Holloway, April 2003.
Speaker at Philips Annual MRI Users Meeting, Antwerp, 2003.
Speaker at Symposium on Brain Imaging and Vision, Brunel University, June 2002.
Speaker at Philips Annual Neuro Users Meeting, Gronendael, 2002.

Conference Presentations

van Koningsbruggen M, Peelen M, Downing P. TMS over the extrastriate body area impairs person detection in briefly-presented real-world scenes. Submitted for VSS 2012.

Oosterhof N, Tipper S, Downing P (2011) Multi-voxel pattern analysis reveals crossmodal visio-motor action-specific representations in human inferior frontal cortex for ego-centric but not allo-centric observed actions. Poster presented at Society for Neuroscience, Washington, DC.

Wiggett A, Hudson M, Clifford A, Tipper S, Downing P (2010). Doing, seeing or both: effects of learning condition on subsequent action perception. Poster presented at the European Conference on Visual Perception, Lausanne, Switzerland.

Oosterhof N, Wiggett A, Diedrichsen J, Tipper S, Downing P (2010). Multivoxel pattern analysis reveals mirror-like responses in human parietal and occipitotemporal cortex for transitive and intransitive actions. Poster presented at the CAOS meeting, Rovereto, IT.

Mundy M, Downing P, Graham K (2010). Extrastriate cortex and medial temporal lobe regions care similarly about category but differentially about featural ambiguity. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society.

Graham K, Downing P, Ingamells I, Dwyer D, Honey R, Mundy M (2010). Domain specific response in the medial temporal lobe and extrastriate cortex during perceptual learning of visually similar stimuli. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society.

Downing P, Kontaris I, Wiggett A (2009). Dissociation of extrastriate body- and biological-motion selective areas by manipulation of visual-motor congruency. Poster presented at the annual meeting of the Society for Neuroscience, Chicago, IL.

Oosterhof N, Wiggett A, Diedrichsen J, Tipper S, Downing P (2009). Multivoxel pattern analysis reveals mirror-like responses in human parietal and occipitotemporal cortex. Poster presented at the annual meeting of the Society for Neuroscience, Chicago, IL.

Taylor J, Wiggett A, Downing P. (2009). Viewpoint sensitivity of visual representations of the body in extrastriate cortex. Poster presented at the European Conference on Visual Perception, Regensburg, Germany.

Wiggett A, Kontaris J, Oosterhof N, Downing P (2009). Is the extrastriate body area involved in action perception? Poster presented at the European Conference on Visual Perception, Regensburg, Germany.

Mundy M, Graham K, Downing P, Honey R, Dwyer D. (2009). An fMRI analysis of stimulus specific and stimulus-invariant activation in perceptual learning. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.

Taylor J, Wiggett A, Downing P (2008). Viewpoint sensitivity of visual representations of the body in extrastriate cortex: an fMRI adaptation study. Poster presented at the Social and Affective Neuroscience Meeting, Boston, MA.

- Van Koningsbruggen M, Downing P, Rafal R (2008). Functional reorganization in the saccadic system: a combined TMS and fMRI study. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Wiggett A, Pritchard I, Downing P (2007). Animate and inanimate objects in human visual cortex: effects of stimulus size and task. Poster presented at the European Conference on Visual Perception.
- Piech, R. M., Lewis, J., Owen, A. M., Roberts, A. C., Downing, P. E., Parkinson, C. H., Parkinson J.A. (2007). Wolf down a bucket of lettuce? Behavioral and neural interactions between hunger and food preference. Poster presented at the Annual Meeting of the Cognitive Neuroscience Society, San Francisco, CA.
- Van Koningsbruggen MG, Peelen MV, Downing PE, Rafal RD. (2006). A compensatory network for voluntary eye movements following a Frontal Eye Field lesion: an fMRI case study. Poster presented at the annual meeting of the Society for Neuroscience, Atlanta, GA.
- Morrison I., Peelen M.V., & Downing P.E. (2006). Midcingulate responses to others' pain are related to motor processing. Poster presented at the annual meeting of the Society for Neuroscience, Atlanta, GA. *Abstract selected for inclusion in the Neuroscience 2006 Press Book.*
- Chan, A W-Y., Peelen, M.V., & Downing, P.E. (2006). An Exploration of Face Selectivity in Human Inferior Frontal Cortex. Poster presented at the 6th annual meeting of the Vision Sciences Society, Sarasota, FL.
- Wiggett, A.J., Peelen, M.V., & Downing, P.E. (2006). Pattern analysis of biological motion selectivity. Poster presented at the 6th annual meeting of the Vision Sciences Society, Sarasota, FL.
- Peelen, M., & Downing, P.E. (2005). Bold latency in FFA and EBA depends on object category. Talk presented at the "Methods in Mind" conference, Aston University, UK.
- Downing, P.E., & Peelen, M. (2005). Cortical Representation of Faces, Bodies and their Parts. Poster presented at the 5th annual meeting of the Vision Sciences Society, Sarasota, FL.
- Downing, P.E., & Peelen, M. (2004). Selectivity for the human body in the fusiform gyrus. Talk presented at the annual meeting of the Society for Neuroscience, San Diego, CA.
- Chan, A W-Y, & Downing, P. (2004). Effects of Viewpoint and Identity in Face- and Body-Selective Cortical Areas. Poster presented at the the 4th annual meeting of the Vision Sciences Society, Sarasota, FL.
- Downing, P.E, Chan, A., & Dodds, C. (2003). FMRI-derived maps of discrimination utility for high-level vision. Talk presented at the annual meeting of the Society for Neuroscience, New Orleans, LA.
- Downing, P.E., C. M. Dodds (2003). Competition in Visual Working Memory for Control of Search. Poster presented at the ECVF annual meeting, Paris.

Downing, P.E., C. M. Dodds, A. W.-Y. Chan, & O. Turnbull. (2003). Strong category-selectivity is rare in human visual cortex. Poster presented at the 3rd annual meeting of the Vision Sciences Society, Sarasota, FL.

Rafal R, Lauder J, Machado L, Dodds C & Downing P. (2002). Facilitation of voluntary saccades by fMRI guided 1Hz rTMS of the frontal eye field. Paper presented at the Society for Neuroscience meeting, Orlando, FL.

Epstein, R., Graham, K.S., Kanwisher, N., & Downing, P. (2002). Scene representations in the parahippocampal place area are view-point specific. Paper presented at the 2nd annual meeting of the Vision Sciences Society, Sarasota, FL.

Downing, P., & Kanwisher, N. (2001). A cortical area specialized for visual processing of the human body. Talk presented at the annual meeting of the Society for Neuroscience, San Diego, CA. *Abstract selected for inclusion in the lay-language Press Book of the Annual Meeting.*

Downing, P., & Kanwisher, N. (2001). A cortical area specialized for visual processing of the human body. Talk presented at the first annual meeting of the Vision Sciences Society, Sarasota, FL.

Downing, P., & Kanwisher, N. (2000). fMRI evidence for location-based attentional selection. Talk presented at the annual meeting of the Society for Neuroscience, New Orleans, LA. *Abstract selected for inclusion in the lay-language Press Book of the Annual Meeting.*

Downing, P., & Kanwisher, N. (2000). fMRI evidence for location-based attentional selection. Poster presented at the Fourth Annual Vision Research Conference, Ft. Lauderdale, FL.

Downing, P., O'Craven, K., Stanley, D., Kanwisher, N. (1999). An fMRI investigation of object based attention. Talk presented at the annual meeting of the Society for Neuroscience, Miami, FL.

Downing, P. & Kanwisher, N. (1999). Where do cortical modules come from? Poster presented at the annual meeting of the Cognitive Neuroscience Society, Washington, DC.

Downing, P. (1999). Attentional consequences of maintaining an object in visual working memory. Poster presented at the ARVO annual meeting, Ft. Lauderdale, FL.

Downing, P.E., & Treisman, A.M. (1995). The shooting line illusion: Attention or apparent motion? Talk presented at the ARVO annual meeting, Ft. Lauderdale, FL.