

# Dr Peter Richard Jones *PhD, MSc, MA(oxon), BA*

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<b>Date of Birth</b>	27 <sup>th</sup> January 1986	<b>Nationality</b>	British

## Research Interests

I am interest in designing digital eye tests, simulating vision loss, and studying the development of vision in children. I am a lecturer at City, University of London, and hold an honorary position at UCL Institute of Ophthalmology.

**Key Words:** *Psychophysics, Developmental Psychology, Sensory Development, Decision Making, Mathematical Psychology, Signal Detection Theory, Cognitive Neuroscience, Programming Tools for Psychologists*

## Education

<b>2009-2012</b>	Ph.D. Psychology	<i>MRC Institute of Hearing Research, Nottingham</i>
<b>2007-2008</b>	M.Sc. Informatics (Distinction)	<i>University of Edinburgh</i>
<b>2004-2007</b>	B.A. Psychology & Philosophy (1 <sup>st</sup> )	<i>Oxford University, St John's College</i>
<b>2002-2004</b>	A-Levels	<i>Aquinas College, Stockport</i>
<b>1997-2002</b>	GCSEs	<i>Priestnall Comprehensive, Stockport</i>

## Employment

**Mar 2020 – City, University of London**

**Present** *Lecturer*

A joint teaching/research faculty post, lecturing in the biology of vision.

**Oct 2012 – University College London**

**Feb 2020** *Post-doctoral Research Fellow*

Responsible for day-to-day oversight of the UCL Child Vision Lab, with Dr Tessa Dekker. My research primarily concerns the development and evaluation of novel tests of infant vision, particularly for use as clinical end-points in ongoing gene-therapy trials. As part of my work I used remote eyetracking to develop the world's first fully automated test of infant visual acuity.

**Nov 2016 – City, University of London [FTE 0.8]**

**Sep 2019** *Post-doctoral Research Fellow*

Responsible for day-to-day oversight of the Crablab, under Prof David Crabb. My research primarily concerns the development and evaluation of a novel screening device for vision loss, using remote eye-tracking. I was also responsible for overseeing the day-to-day running of the lab, including supporting the work of 7 PhD students and 2 Postdocs.

**Nov 2008 – The Scottish Arts Council**

**Sep 2009** *Statistics and Reporting Officer*

Responsible for producing a government report on the Youth Music Initiative: a £10M per annum scheme that provides free music tuition to all children in Scotland. As part of this work, I developed the Scottish Arts Council's first fully automated, online data-gathering tool. The written report was delivered to the Scottish Parliament on time, in August 2009.

## Peer-Reviewed Publications

- [42] **Jones, P. R.**, Lindfield, D., & Crabb, D. P. (2020). Using an inexpensive tablet perimeter (Eyecatcher) to rapidly triage patients in a glaucoma clinic waiting area, *British Journal of Ophthalmology*, **in press**.
- [41] Asfaw, D., **Jones, P. R.**, & Crabb, D. P. (2020). The effects of a simulated visual scotoma on natural eye movements, *Scientific Reports*, **in press**.
- [40] **Jones, P. R.** (2020). An open-source static threshold perimetry test using remote eye-tracking (Eyecatcher): Description, validation, and normative data, *Translational Vision Science & Technology*, **in press**.
- [39] **Jones, P. R.**, Demaria, G., Tigchelaar, I., Asfaw, D. S., Edgar, D. F., Campbell, P., Callaghan, T., & Crabb, D. P. (2020). The human touch: Using a webcam to autonomously monitor compliance during visual field assessments, *Translational Vision Science & Technology*, **in press**.
- [38] Chow-Wing-Bom, H., Dekker, T. M., & **Jones, P. R.** (2020). The human touch: Using a webcam to monitor compliance during visual field testingThe worse eye revisited: Quantifying the everyday impact of unilateral peripheral loss, *Vision Research*, 169:49-57. doi:[10.1016/j.visres.2019.10.012].
- [37] **Jones, P. R.**, Somoskeöy, T., Chow-Wing-Bom, H., & Crabb, D. P. (2020). Seeing other perspectives: Evaluating the use of virtual and augmented reality to simulate visual impairments (OpenVisSim), *NPJ Digital Medicine*, 3(1):1-9. doi:[10.1038/s41746-020-0242-6].
- [36] **Jones, P. R.**, Tigchelaar, I., Demaria, G., Wilson, I., Bi, W., Taylor, D. J., & Crabb, D. P. (2020). Refinement and preliminary evaluation of two tablet-based tests of real-world visual function, *Optometry and Physiological Optics*, 40(1):35-46. doi:[10.1111/opo.12658].
- [35] Enoch, J., Jones, L., Taylor, D. J., Bronze, C., Kirwan, J. F, **Jones, P. R.**, & Crabb, D. P. (2020). How do different lighting conditions affect the vision and quality of life of people with glaucoma? A systematic review, *Eye*, 34:138-154. doi:[10.1038/s41433-019-0679-5].
- [34] Kyu Han, H. & **Jones, P. R.** (2019). Plug and play perimetry: Evaluating the use of a self-calibrating digital display for screen-based threshold perimetry, *Displays*, 60:30-38. doi:[10.1016/j.displa.2019.08.006].
- [33] **Jones, P. R.**, Philippin, H., Makupa, W., Burton, M., & Crabb, D. P. (2019). Severity of visual field loss at first presentation to glaucoma clinics England and Tanzania, *Ophthalmic Epidemiology*, 27(1):10-18. doi:[10.1080/09286586.2019.1661499].
- [32] Enoch, J., McDonald, L., Jones, L., **Jones, P. R.**, Crabb, D. P. (2019). Sight: the most valuable sense?, *JAMA Ophthalmology*, 137(11):1317-1320. doi:[10.1001/jamaophthalmol.2019.3537].★★★★
- [31] Taylor, D. J., Smith, N. D., **Jones, P. R.**, Binns, A. M., & Crabb, D. P. (2019). Measuring dynamic levels of anxiety and concern during simulated mobility tasks in people with non-neovascular age-related macular degeneration (AMD), *British Journal of Ophthalmology*, **in press**.
- [30] **Jones, P. R.**, Landin, L., McLean, A., Juni, M. Z., Maloney, L. T., Nardini, M. & Dekker, T. M. (2019). Efficient visual information sampling develops late in childhood, *Journal of Experimental Psychology: General*, 148(7):1138-1152. doi:[10.1037/xge0000629].★★★★
- [29] Farahbakhsh, M., Dekker, T. M., & **Jones, P. R.** (2019). Psychophysics with children: Evaluating the use of maximum likelihood estimators in children aged 4 – 15 years (QUEST+), *Journal of Vision*, 19:22. doi:[10.1167/19.6.22].
- [28] Ometto, G., Moghul, I., Montesano, G., Hunter, A., Pontikos, N., **Jones, P. R.**, Keane, P. A., Denniston, A. K., & Crabb, D. P. (2019). ReLayer: a free, online tool for measuring retinal thickness based on a new automatic method for the segmentation of layers in OCT images, *Translational Vision Science & Technology*, 8:25. doi:[10.1167/tvst.8.3.25].
- [27] **Jones, P. R.** (2019). A note on detecting statistical outliers in psychophysical data, *Attention, Perception, & Psychophysics*, 81(5):1189–1196. doi:[10.3758/s13414-019-01726-3].
- [26] **Jones, P. R.**, Smith, N. D., Bi, W., & Crabb, D. P. (2019). Portable perimetry using eye-tracking on a tablet computer – a feasibility assessment, *Translational Vision Science & Technology*, 8:17. doi:[10.1167/tvst.8.1.17].

- [25] **Jones, P. R.** (2018). QuestPlus: a MATLAB implementation of the QUEST+ adaptive psychometric method, *Journal of Open Research Software*, 6(1):27. doi:[10.5334/jors.195].
- [24] Montesano, G., Crabb D. P., **Jones, P. R.**, Fogagnolo, P., Digiuni, M., & Rossetti, L. M. (2018). Evidence for alterations in fixational eye movements in glaucoma, *BMC Ophthalmology*, 18:191. doi:[10.1186/s12886-018-0870-7].
- [23] **Jones, P. R.** (2018). The development of perceptual averaging: efficiency metrics in children and adults using a multiple-observation sound-localization task, *The Journal of the Acoustical Society of America*, 144(1):228-241. doi:[10.1121/1.5043394].
- [22] Asfaw, D., **Jones, P. R.**, Smith, N. D., & Crabb, D. P. (2018). Data on eye movements in people with glaucoma and peers with normal vision, *Data in Brief*, 19:1266–1273. doi:[10.1016/j.dib.2018.05.076].
- [21] Asfaw, D., **Jones, P. R.**, Mönster, V. M., Smith, N. D., & Crabb, D. P. (2018). Does glaucoma alter eye movements when viewing images of natural scenes? A between-eye study, *Investigative Ophthalmology and Vision Science*, 59:3189-3198. doi:[10.1167/iovs.18-23779].
- [20] **Jones, P. R.** (2018). Myex: a MATLAB interface for the Tobii EyeX eye-tracker, *Journal of Open Research Software*, doi:[10.5334/jors.196].
- [19] **Jones, P. R.** (2018). Sit still and pay attention: Using the Wii Balance-Board to detect lapses in concentration in children during psychophysical testing, *Behavior Research Methods*, 51(1):28–39. doi:[10.3758/s13428-018-1045-4].
- [18] **Jones, P. R.**, & Ometto, G. (2018). Degraded Reality: Using VR/AR to simulate visual impairments, *Proceedings of IEEE VR Workshop 2018*. doi:[10.1109/VAR4GOOD.2018.8576885].
- [17] Manning, C., **Jones, P. R.**, Dekker, T. M. & Pellicano, E. (2018). Psychophysics with children: Investigating the effects of attentional lapses on threshold estimates, *Attention, Perception, & Psychophysics*, 80(5): 1311–1324. doi:[10.3758/s13414-018-1510-2]
- [16] Montesano, G., Way, C. M., Ometto, G., Ibrahim, H., **Jones, P. R.**, Carmichael, R., Liu, X., Aslam, T., Keane, P. A., Crabb, D. P., & Denniston, A. K. (2018). Optimizing OCT acquisition parameters for assessments of vitreous haze for application in uveitis, *Nature Scientific Reports*, 8, 1648. doi:[10.1038/s41598-018-20092-y]
- [15] **Jones, P. R.**, & Dekker, T. (2018). The development of perceptual averaging: Learning what to do, not just how to do it, *Developmental Science*, 21(3):e12584. doi:[10.1111/desc.12584].
- [14] Garcia, S. E., **Jones, P. R.**, Michaelides, M., Rubin, G. S., & Nardini, M. (2017). Multisensory Cue Combination after Sensory Loss: Audio-Visual Localization in Patients with Progressive Retinal Disease, *Journal of Experimental Psychology: Human Perception and Performance*, 43(4), 729–740. doi:[10.1037/xhp0000344].
- [13] Garcia, S. E., **Jones, P. R.**, Rubin, G. S., & Nardini, M. (2017). Auditory Localisation Biases Increase with Sensory Uncertainty, *Nature Scientific Reports*, 7, 40567. doi:[10.1038/srep40567]
- [12] **Jones, P. R.**, Yasoubi, N., Nardini, M., & Rubin, G. S. (2016). Feasibility of Macular Integrity Assessment (MAIA™) microperimetry in children: Sensitivity, reliability, and fixation stability in healthy observers, *Investigative Ophthalmology and Vision Science*, 57, 6349–6359. doi:[10.1167/iovs.16-20037]
- [11] **Jones, P. R.** (2016). A tutorial on cue combination and Signal Detection Theory: Using changes in sensitivity to evaluate how observers integrate sensory information, *Journal of Mathematical Psychology*, 73, 117–139. doi:[10.1016/j.jmp.2016.04.006]
- [10] **Jones, P. R.**, Garcia, S. E., & Nardini, M. (2015). Digital LED Pixels: Instructions for use and a characterization of their properties, *Behavioral Research Methods*, 48(4), 1266–1284. doi:[10.3758/s13428-015-0653-5]
- [9] **Jones, P. R.**, Kalwarowsky, S., Braddick, O. J., Atkinson, J., & Nardini, M. (2015). Optimizing the rapid measurement of detection thresholds in infants, *Journal of Vision*, 15(11), 2–2. doi:[10.1167/15.11.2]

- [8] Petrini, K., Jones, P. R., & Nardini, M. (2015). Hearing where the eyes see: children use an irrelevant visual cue when localizing sound, *Child Development*, 86(5), 1449–1457. doi:[10.1111/cdev.12397]
- [7] Jones, P. R., Moore, D. R., Shub, D. E., & Amitay, S. (2015). The role of response bias in perceptual learning, *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 41(5), 1456–1470. doi:[10.1037/xlm0001111]
- [6] Jones, P. R., Moore, D. R., & Amitay, S. (2015). Development of auditory selective attention: Why children struggle to hear in noisy environments, *Developmental Psychology*, 51(3), 353–369. doi:[10.1037/a0038570]
- [5] Jones, P. R., Kalwarowsky, S., Atkinson, J., Braddick, O. J., & Nardini, M. (2014). Automated measurement of resolution acuity in infants using remote eye-tracking, *Investigative Ophthalmology and Vision Science*, 55(12), 8102–8110. doi:[10.1167/iov.14-15108].
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- [3] Jones, P. R., Moore, D. Shub, D. E., & Amitay, S. (2014). Learning to detection a tone in unpredictable noise, *The Journal of the Acoustical Society of America*, 135, EL128–EL133. doi:[10.1121/1.4865267]
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- [1] Nardini, M., Jones, P. R., Bedford, R., & Braddick, O. J. (2008). Development of cue integration in human navigation, *Current Biology*, 18, 689–693. doi:[10.1016/j.cub.2008.04.021]★★★★

## Teaching & Supervision

- 2016 – Present**      **City PhD Supervisor**  
*Secondary supervisor for PhD students (N = 1), w/ Prof David Crabb*  
 Responsible for day-to-day supervision, planning, and support.
- 2016 – Present**      **City BSc Supervisor**  
*Dissertation supervisor for final-year BSc Optometry undergraduate students*  
 Responsible for supervising project students and marking dissertations.
- 2014 – Present**      **UCL Lecturer**  
*Lecturer on final year undergraduate module: NEUR3045 Advanced Visual Neuroscience*  
 Responsible for the “visual development” component: designing slides, lecturing, setting exam questions, and marking essays.
- 2014 – Present**      **UCL PhD Supervisor**  
*Secondary supervisor for PhD students (N = 2), w/ Prof Gary Rubin & Dr Tessa Dekker*  
 Responsible for day-to-day supervision, planning, and support.
- 2014 – 2016**      **UCL MSc Supervisor**  
*Dissertation supervisor for MSc Biology of Vision students*  
 Responsible for designing projects, supervising students and marking dissertations.
- 2014 – 2016**      **UCL BSc Supervisor**  
*Dissertation supervisor for final-year BSc Psychology undergraduate students*  
 Responsible for supervising project students and marking dissertations.
- 2012 – 2012**      **Nottingham University Demonstrator**  
*Demonstrator on international short-course: “Matlab for Psychology and Neuroscience”*  
 Responsible for providing instruction and practical assistance to course attendees.
- 2011 – 2012**      **Nottingham University Demonstrator**  
*Practical skills demonstrator for second year undergraduates*  
 Responsible for developing course materials (python code), advising students on how to collect and analyse experimental data, and providing feedback on oral and written reports.

## Reviewing, Examining & Editorships

**Reviewer:** Acta Ophthalmologica; British Journal of Ophthalmology; Child Development; Child Neurology; Clinical EEG & Neuroscience; Cognition; Current Biology; Current Eye Research; Environment & Behavior; Hearing Research; International Journal of Audiology; Investigative Ophthalmology & Vision Science; Journal of Speech, Language & Hearing Research; Journal of the Acoustical Society of America; Ophthalmic & Physiological Optics; Optometry & Vision Science; Perception; PLoS One; Royal Society Open Science; Translational Vision Science & Technology.

**Examiner:** MPhil (External) for University of Saint David (Trinity Saint David), 2017.

**Guest Editor:** PLoS One.

## Grants

- 2019**      **City QR Global Challenges Fund**  
£10,000      *“Glaucoma Detection Study (GDS) – detecting glaucoma using a combination of low-cost, portable and easy to perform tests.”*  
Co-applicant w/ Prof D Crabb (PI).
- 2019**      **International Glaucoma Association / The College of Ophthalmologists**  
£94,149      *“Detecting glaucoma using a combination of low-cost, portable and easy to perform tests.”*  
Co-applicant w/ Dr Victor Hu (PI), Prof D Crabb, Prof M Burton, Prof W Nolan, & Dr H Philippin.
- 2019**      **International Glaucoma Association / The College of Optometrists**  
£22,738      *“Tapping into the 5000 hours - feasibility of home monitoring of visual fields.”*  
Co-applicant w/ Dr T Callaghan (PI), Dr P Campbell, Prof D Crabb, & Prof D Edgar.
- 2017**      **City, University of London: Industrial Strategy Seed Fund**  
£4,717      *“Validating a Virtual Reality [VR] simulator of eye-disease.”*  
Sole applicant.
- 2017**      **BRC 2017 Challenge Fund for Vision**  
£11,815      *“Evaluating a novel Virtual Reality [VR] simulator of eye-disease.”*  
Sole applicant.
- 2016**      **Moorfields Special Trustees Project Grant**  
£14,708      *“To develop interactive 3D visualisations of eye-disease, suitable for mobile phone displays.”*  
Sole applicant.
- 2016**      **Moorfields Special Trustees PhD Studentship**  
£99,987      *“Child-friendly, clinically relevant measures of visual structure and function.”*  
Co-applicant w/ Dr T Dekker and Prof G Rubin (PI).
- 2012**      **MRC Centenary Award**  
£39,084      *“Ascension: Using mobile phones to improve hearing.”*  
NB: Award not taken up, in preference for job at UCL.
- 2012**      **Deafness Research UK summer scholarship award**  
£1,600      *“Evaluating the role of response bias in hearing threshold measurement.”*
- 2012**      **MRC Travel Award**  
£1,442      *“Funding to attend ARO 2012 (San Diego).”*
- 2006**      **Wellcome Trust Vacation Research Scholarship**  
£1,280      *“Interactions between landmark and self-motion cues for navigation.”*

## Current Projects / Collaborations

### Home monitoring of visual fields in glaucoma

w/ Dr Tamsin Callaghan & Dr Peter Campbell et al (City, University of London)

### Developing novel measures of visual field loss using remote eye-tracking

w/ Prof David Crabb (City, University of London) & Peek Vision Ltd

### Using virtual reality to simulate visual impairments

w/ Studio Audience Ltd and Dr Neruban Kumaran (Moorfields Eye Hospital)

### Developing novel, automated tests of vision suitable for infants and children

w/ Prof Gary Rubin (UCL), Profs Janette Atkinson & Oliver Braddick (University of Oxford)

### Relating functional measures of vision to changes in the eye (AO-SLO, OCT) and brain (fMRI)

w/ Dr Tessa Dakker (UCL) and Dr Adam Dubis (UCL)

### Making psychophysical measures in children more robust, by accounting for inattentiveness

w/ Dr Catherine Manning (University of Oxford)

### Developing novel, automated tests of hearing suitable for infants and children

w/ Prof Kevin Munro (University of Manchester) & Prof David Moore (Cincinnati Children's Hospital)

### Developing a headmounted clinical screening device for assessing visual function

w/ Dr Matt Dunn & Prof Jonathan Erichsen (University of Cardiff) & Acuity ETS Ltd

### Measuring temporal contrast sensitivity in patients with photoreceptor dystrophies

w/ Dr Matteo Rizzi & Prof Robin Ali (UCL)

## Invited Talks

- [2019] Visual Fields: Thinking outside the bowl. *Ophthalmology Regional Study Day (Royal Surrey County Hospital)*.
- [2019] The development of sensory integration in children. *Durham University Psychology Seminar*.
- [2019] On the use of Virtual-/Augmented-Reality to simulate glaucoma. *Optometry Tomorrow 2019, Birmingham*.
- [2018] Developing eye-tests for hard to reach populations. *Cardiff University Seminar Series: "Cornea to Cortex"*.
- [2018] Novel technologies to expand diagnostic capacity in surveys. *ISER 2018 Special Interest Session: The Global Burden of Eye Disease*.
- [2018] New approaches to assessing visual function. *Moorfields Academy Meeting XXIV*.
- [2017] The development of spatial averaging abilities in children. *UEL CogDev seminar series*.
- [2015] Clinical Psychophysics: How and why 'real world' measures of perceptual sensitivity differ from those of the lab. *EPSRC workshop: "Visual Statistics in Humans and Machines"*.
- [2014] The role of internal noise in auditory development: A cautionary tale of sound and fury. *EPS workshop: "Noisy Brains? The role of internal noise in typical and atypical development"*.
- [2008] Computationally modelling the disparity span in reading. *Glenfinnan modelling workshop*.

## Selected Conference Presentations

- [2019] Jones PR, Lindfield, D. & Crabb D. P. "No need to press a button" – Using a portable eye movement perimeter to rapidly assess visual field loss in a glaucoma clinic. *ARVO, Vancouver, Canada*.
- [2019] Enoch JNT, McDonald L, Jones L, Jones PR, & Crabb D. P. Sight: the most valuable sense? *ARVO, Vancouver, Canada*.
- [2018] Jones PR, Somoskeöy T, Chow-Wing-Bom H. & Crabb D. P. Where did I leave my phone? Using virtual reality to assess the differential impact of superior and inferior visual field loss on daily living. *UKEGS, London, UK*.



- [2018] Somoskeöy T, Jones PR, Chow-Wing-Bom H. & Crabb D. P. Using virtual reality to study the impact of eye disease. *BCOVS*, Cambridge, UK.
- [2018] Jones PR, Somoskeöy T, Chow-Wing-Bom H. & Crabb D. P. Where did I leave my phone? Using virtual reality to assess the differential impact of superior and inferior visual field loss on daily living. *BCOVS*, Cambridge, UK.
- [2018] Farahbakhsh M, Jones, PR, Dekker, TM: Development of Contrast Sensitivity in children using a novel child-friendly method. *ECVP*, Tieste, Italy.
- [2018] Chow-Wing-Bom HT, Dekker, TM, Jones, PR: Virtual Reality [VR] as tool to assess the effects of asymmetric vision loss on visual search performance. *VSS*, Florida, USA.
- [2018] Farahbakhsh M, Dekker, TM, Jones, PR: The Contrast Sensitivity Function in children: Bayesian adaptive estimation using QUEST+. *VSS*, Florida, USA.
- [2018] Asfaw DS, Jones, PR, Crabb, D: Do scotomas in glaucoma affect eye movements? A between eye study in people with asymmetric visual field loss. *ARVO*, Hawaii, USA.
- [2018] Taylor D, Jones, PR, Smith, N, Binns, A, Crabb, D: Measuring real-time anxiety during simulated mobility scenarios in people with non-neovascular age-related macular degeneration. *ARVO*, Hawaii, USA.
- [2017] Jones, PR, Smith, ND, Crabb, DP: Portable perimetry using eye-tracking on a tablet computer – a feasibility assessment. *BOMG*, Cardiff, UK.
- [2015] Jones PR, et al: Automated static threshold perimetry using a remote eye tracker. *ECVP*, Liverpool, UK.
- [2015] Manning C, Jones PR, et al: How does inattentiveness affect threshold estimates in children? *ECVP*, Liverpool, UK.
- [2015] Nardini M, Jones PR, et al: Learning efficient perceptual sampling. *VSS*, St Pete Beach, USA.
- [2015] Garcia SE, Jones PR, et al: Visual-auditory localization in central and peripheral space, *VSS*, St Pete Beach, USA.
- [2015] Jones PR, et al: Automated static threshold perimetry using a remote eye tracker. *ARVO*, Denver, USA.
- [2014] Jones, PR, et al: Efficient strategies for measuring perceptual thresholds in infants using eye tracking. *ECVP*, Belgrade, Serbia.
- [2014] Dekker, T, Jones, PR, et al: Measuring perceptual sampling efficiency in adults and children. *ECVP*, Belgrade, Serbia.
- [2014] Jones, PR, et al: An automated test of visual acuity using remote eye tracking. *ICIS*, Berlin, Germany.
- [2014] Jones, PR, et al: An automated test of infant visual acuity using remote eye tracking. *ARVO*, Orlando, USA.
- [2013] Jones, PR, et al: Novel approaches to automated, real-time eye-movement classification in infants and adults. *CRS*, Toronto, Canada.
- [2012] Jones, PR, et al: Effects of practice on informational masking. *ARO*, San Diego, USA.
- [2011] Jones, PR, et al: Practice reduces informational masking by improving decision strategy and reducing lapse rates. *BSA*, Nottingham, UK.
- [2010] Jones, PR, et al: Auditory perceptual learning: Noise reduction or signal gain? *BSA*, Manchester, UK.
- [2007] Jones, PR, et al: Interactions between landmark and self-motion cues for navigation in adults and children. *EPS*, London, UK.

## Selected Public Engagement Activities (2017+)

- [2019] Article in trade magazine (The International Glaucoma Association Newsletter): “Detecting glaucoma using a combination of low-cost, portable and easy to perform tests”
- [2019] Article in trade magazine (The Ophthalmologist): “Doing What Comes Naturally” (New innovations in visual field testing)  
<https://theophthalmologist.com/subspecialties/doing-what-comes-naturally>
- [2019] Exhibition at the WIRED Health (London): “Simulating sight loss” (on behalf of the NIHR BRC unit at Moorfields)

- [2018] Article in trade magazine (ENT & Audiology News): “Facing up to the challenge of behavioural observation in infant hearing assessment”  
<https://entandaudiologynews.com/features/audiology-features/post/facing-up-to-the-challenge-of-behavioural-observation-in-infant-hearing-assessment>
- [2018] Exhibition at the Science Museum (London): “Augmented reality simulated sight loss” (as part of Special Event: “Medicine”)
- [2018] Article in trade magazine (The Ophthalmologist): “Personalizing Reality” (New innovations in simulating eye disease)  
<https://theophthalmologist.com/subspecialties/personalizing-reality>
- [2018] Exhibition at the Wellcome Trust Museum (London): “Augmented reality simulated sight loss” (as part of Special Event: “Your Reality Is Broken”)
- [2018] Exhibition at 2018 Commonwealth Heads of Government Meeting forum: “The global burden of glaucoma” (attendees incl. Theresa May & Bill Gates)
- [2018] Article in trade magazine (Optician): “The Child Vision Lab”
- [2017] Exhibition at See Science Festival (a public engagement event aimed at educating children from the local community about our work)
- [2017] Online video for the BRC “meet our researchers” campaign
- [2017] Hosted a Dagenham (Trident) work experience student: a week-long placement for a pre-university student from the local community, with an interest in pursuing a career in science
- [2017] Exhibition at 2017 Mary Kitzinger Trust Workshop (an annual workshop attended by parents and professionals with an interest in children’s eye health)
- [2017] Created a digital artwork “Simulated Sight Loss” for the Moorfields Art Committee
- [ongoing] Prepared and distributed an annual newsletter detailing the work of the Child Vision Lab, and thanking local parents/children for participating in our studies
- [ongoing] Specialist moderator (Sensory Development in Children) for [www.reddit.com/r/AskScience](http://www.reddit.com/r/AskScience) – an online science Q&A board with 15.2 million subscribers
- [ongoing] Creator and moderator of [www.reddit.com/r/Hearing](http://www.reddit.com/r/Hearing) – an online science forum with 1,192 subscribers
- [ongoing] Collaboration with international artist Joey Foster Ellis (TED-fellow) to create artworks that explore patients’ experiences of sight loss

## Selected Community Contributions (Code Available Online)

- [Matlab] **QuestPlus** *Matlab implementation of QUEST+: a highly efficient/flexible algorithm for adaptive psychophysical parameter estimation.*
- [Matlab] **IVIS** *A toolbox for eye-gaze conditional psychophysical experiments. It automates the data processing and eye-movement classification.*
- [Matlab] **fig-matlab** *A Matlab toolbox for producing publication-quality figures.*
- [Matlab/C] **TobiiEyeX** *Matlab code to retrieve data from a Tobii Eye-X (budget) eye-tracker.*
- [Matlab/C++] **EIZOSensor** *Matlab code for controlling the built-in photometer in EIZO monitors.*
- [Matlab/C] **ArduinoLED** *Code for controlling Adafruit LED Pixels, via an Arduino microcontroller.*
- [Matlab] **Sn** *Implementation of Rousseeuw & Croux’s  $S_n$  factor (NB: a non-parametric measure of spread, useful for identifying outliers).*
- [LaTeX] **ihr-thesis** *A LaTeX class for formatting a PhD thesis.*
- [LaTeX] **JASA-EL** *A LaTeX class for reproducing JASA-EL typesetting.*
- [Java] **Qube** *A ‘Tetris’-like auditory-training game, including a real-time ASIO audio engine.*

## Awards & Scholarships

- 2018 1<sup>st</sup> Place in ‘Health’s Got Talent’ (competition regarding novel ways to improve undergraduate teaching)
- 2018 Finalist (runner-up): “Stars of Moorfields” award for commitment to public & patient engagement
- 2018 1<sup>st</sup> Place in ‘Made@City’ (competition regarding novel technologies and innovation)
- 2017 1<sup>st</sup> Place Poster Prize at conference: BOMG 2017, Cardiff, UK



- 2009 Medical Research Council Postgraduate Funding Award
- 2008 1<sup>st</sup> Place Prize in the Edinburgh University competition to promote public understanding of Informatics
- 2008 Marie Curie Trust funding to attend the 4-day Glenfinnan Modelling Workshop
- 2007 Engineering and Physical Sciences Research Council Postgraduate Funding Award
- 2007 St John's College Prize for outstanding performance in Psychology, Philosophy & Physiology
- 2007 Gordon Baker Prize for consistently outstanding work in Philosophy
- 2006 Casbard Scholarship for First Class marks in Psychology, Philosophy & Physiology Part I examinations
- 2005 St John's College Prize for outstanding performance in the Preliminary Examinations in Statistics
- 2005 St John's College Prize for outstanding performance in the Preliminary Examinations in Philosophy