UNIVERSITY OF PENNSYLVANIA - SCHOOL OF MEDICINE
Curriculum Vitae

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Geoffrey K Aguirre, M.D., Ph.D.

Website: http://gkaguirre.com

email: aguirreg@upenn.edu

Narrative description:

I am an Associate Professor of Neurology at the University of Pennsylvania. My area of clinical speciality is Behavioral Neurology which encompasses disorders of higher-level cognitive function including language, memory, and visuo-spatial function. My research focus is translational vision science. Using functional and structure techniques I have examined the organization of visual cortex from its large-scale, anatomical arrangement to the precise and subtle form of population neural coding for object features. A particular focus is upon the measurement of visual cortex in the setting of blinding disease. I study the methodological development and application of neuroimaging techniques. I am the Associate Director of the Center for Neuroscience and Society and a Senior Consultant to the MacArthur Foundation Research Network on Law and Neuroscience, with a focus upon the use and misuse of brain imaging data. Finally, I am the Associate Director of the Neurology Residency program at the Hospital of the University of Pennsylvania.

Office Address: 3 West Gates
Hospital of the University of Pennsylvania
Philadelphia, PA 19104-4283

Education:

1988-92	B.A. Princeton University (Politics) Thesis: Congressional control of NIH funding priorities during the AIDS crisis
1992-00	M.D. University of Pennsylvania
1992-98	Ph.D. University of Pennsylvania (Neuroscience) Thesis: Neural components of topographical orientation

Postgraduate Training and Fellowship Appointments:

2000-01	Intern in Medicine, Pennsylvania Hospital, Philadelphia

2001-04 Resident in Neurology, Hosp. of the Univ of Pennsylvania, Philadelphia

Faculty Appointments:

2004-2013 Assistant Professor of Neurology, Department of Neurology
University of Pennsylvania School of Medicine

2013-present Associate Professor of Neurology, Department of Neurology
University of Pennsylvania School of Medicine

University Committee Appointments:

2016-2019 Social Responsibility Advisory Committee (SRAC) which advises the University Trustees and Trustee Subcommittee on Proxy Voting

2020-Present Member, Senate Committee on Academic Freedom and Responsibility (SCAFR)

Specialty Certification:

2005-present American Board of Neurology

Licensure: Pennsylvania

Awards, Honors and Membership in Honorary and National Societies:

2020 Recipient of a Research to Prevent Blindness / Lions Clubs International Foundation Low Vision Research Award
2018 Elected as a Fellow of the Optical Society of America
2018 Resident's Award for Excellence in Teaching
2013 Elected as a Fellow of the Philadelphia College of Physicians
2012 Elected as a Fellow of the the American Neurological Association
2011 Appointed Senior Consultant to the MacArthur Foundation Research Network on Law and Neuroscience
2008 Member of the Neuroimaging Steering Committee of the Hastings Center for Bioethics (2008-2014)
2004 Samuel Zeritsky award for excellence in research (Univ. of Penn)
2004 Penn Pearls award for excellence in medical student education (Univ. of Penn)
2001 Intern of the Year (Pennsylvania Hospital)
2001 Thomas Bond Prize for the best research by a house officer (Pennsylvania Hospital)
2000 Eric Corey Raps Memorial Prize for excellence in clinical neurology (Univ. of Penn)
1999 World Technology Award Finalist in Health and Medicine
1998 Louis B. Flexner prize for the best dissertation research in the neurosciences (Univ. of Penn)
1998 G. Milton Shy Award for the best essay in clinical neurology (American Academy of Neurology)

Memberships in Professional and Scientific Societies:

National Societies: American Academy of Neurology

American Neurological Association
Society for Neuroscience
Vision Sciences Society — Young Investigator Award committee and presentation review committee.
Optical Society of America — Chair of the vision technical group and organizer of the Fall Vision Meeting
Optical Society of America —Member of the Edgar D. Tillyer Award Committee , 2019-2021

Editorial / Board / Review Positions:

2004-2009	Associate Editor, Neuroscience Letters
2009-2012	Editorial Board, NeuroImage
2018-Present	Editorial Board, Journal of Vision
2018-Present	Member, Sensory Perception and Cognition (SPC) NIH study section
2020	Ad hoc member of the NIMH Board of Scientific Counselors (extramural reviewer of Bevil Conway's research program)
2020-Present	Burroughs Wellcome Fund, Career Awards for Medical Scientists Advisory Committee

Service at University Level Committees:

1. Social Responsibility Advisory Committee (SRAC) 2016 - 2019

Major Teaching and Clinical Responsibilities at the University of Pennsylvania and Affiliated Hospitals:

1. Attending rounds at the Hospital of the University of Pennsylvania 6 weeks/year
2. Residents clinic attending 20 sessions / year

Additional Teaching and Administrative Roles at the University of Pennsylvania:

1. Member Neuroscience Graduate Group
2. Member Psychology Graduate Group
3. Associate Director of the Center for Neuroscience and Society
4. Associate Director of the Neurology Residency Program
5. Vision Research Center Executive Committee and director of the Instrumentation Core
6. Center for Functional Neuroimaging Executive committee and director of the Data Analysis Core
7. Organizer of the annual Elliott Lectureship in Behavioral Neurology
8. Lecturer in the annual Neurology Board review course (R. Price, organizer)
9. Lecturer in the Brain and Behavior medical school course

Lectures by Invitation: (Please list only those in the past 5 years. *upcoming)

July, 2020* "Vision research on the Flywheel platform", Digital Workflow in Imaging Research Symposium, School of Medicine and Munich School of Bioengineering, Munich, Germany (canceled due to Covid-19)

June, 2020* "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", Neurology Grand Rounds, New York University School of Medicine, NY, NY

April, 2020 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", University of Helsinki, Biomedicum Helsinki Seminars, Helsinki, Finland (cancelled due to Covid-19)

March, 2020 "Individual differences in visual pathway structure and function". Medical College of Wisconsin's Distinguished Lecture Series, Milwaukee (cancelled due to Covid-19)

February, 2020 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", University of Iowa, Iowa City, Iowa

January, 2020 Invited participant, National Eye Institute Audacious Goals Initiative for Regenerative Medicine Understanding Human Retina Biology and Perception Workshop, Bethesda, Maryland

February, 2019 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", Emory University, Atlanta.

February, 2019 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", Emory University, Atlanta.

February, 2019 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", Emory University, Atlanta.

December, 2018 "Post-retinal structure and function in human blindness", Visual Function Acquisition and Restoration Workshop, Hebrew University, Jerusalem, Israel.

May, 2018 "Variation in Temporal Stimulus Integration Across Visual Cortex", Invited Symposium, Vision Sciences Society Annual Meeting, St. Petersburg Florida.

April, 2018 "Neuroscience in the Courtroom", Haverford College, Haverford, Pennsylvania.

February, 2018 "Scientific aspects of afferent visual dysfunction in neuro-degenerative disease", North American Neuo-Ophthalmologic Society (NANOS) annual meeting, Kailua, Hawaii.

October 2017 Served as a commentator on the topic of "Protecting Autonomy in the Era of Neural Control" at the Law and STEM Young Scholars Forum, University of Pennsylvania

August, 2017 "Perceptual, pupil, and visual cortex responses to melanopsin stimulation in humans", Institute for Ophthalmic Research, University of Tübingen Medical Centre, Tübingen, Germany

August, 2017 "Temporal integration of visual information across visual cortex", European Conference on Visual Perception (ECVP), Berlin, Germany

May, 2017 "Post-retinal structure and function in human blindness", VSS@ARVO invited symposium, The Association for Research in Vision and Ophthalmology Annual Meeting, Baltimore, MD

April, 2017	“Scientific aspects of afferent visual dysfunction in neuro-degenerative disease”, American Academy of Neurology annual meeting, Boston, MA
Feb, 2017	“Measuring human melanopsin function”, Neurology Grand Rounds, Johns Hopkins University, Baltimore, MD
Feb, 2017	“Measuring human melanopsin function”, Neurology Grand Rounds, University of Maryland, Baltimore, MD
Dec, 2016	“Measuring human melanopsin function”, Ophthalmology Grand Rounds, University of Pennsylvania, Philadelphia
Dec, 2016	“Melanopsin: From the dawn of vision to the fear of light”, Philadelphia Neurological Society, Philadelphia
Nov, 2016	“Measuring human melanopsin function”, Neuroscience Seminar Series, NYU, New York
Sept, 2016	“Measuring human melanopsin function”, NextGenVis Course on Computational Neuroimaging, York University, York UK
Sept, 2016	“Measuring human melanopsin function”, Visual Brain Core seminar series, University of Alabama at Birmingham
Sept, 2016	“Pre-register, please. Measure with care. Model with math. Replicate, share”, Keynote Address, Neuroscience Graduate Group Student Retreat, University of Pennsylvania, Philadelphia
Feb, 2016	“Measuring human melanopsin function”, Department of Ophthalmology and Visual Sciences, University of Illinois at Chicago
Jan, 2016	“An introduction to fMRI and functional correlation”, Doctoral College “Imaging the Mind” Winter-School, University of Salzburg, Austria
Nov, 2015	“Measuring human melanopsin function”, Ophthalmology Dept., McGill University, Montreal, Canada
Sept, 2015	“Neuroimaging of the visual system without vision”, American Society of Neurophysiological Monitoring, Fall Meeting, Philadelphia, PA
June, 2015	Faculty-at-large member for the NINDS/AUPN/ANA/CNS Symposium on Combining Clinical and Research Careers, Washington, DC
June, 2015	“Neuroscience for legal decision makers”, Illinois Advanced Judicial Academy, *Science in the Courtroom*, Champaign, IL
May, 2015	“The elusive neuroimaging marker of mild traumatic brain injury”, Traumatic Brain Injury Interdisciplinary Symposium, Franklin Institute, Philadelphia, PA
March, 2014	“Neuroimaging 2.0”, Hall Center for Law and Health Event/Indiana Health Law Review Symposium: Neuroscience and Law: Injury, Capacity and Illness, Indianapolis, IN
Feb, 2014	"Melanopsin and S-cone responses in the human pupil and brain", Vision Center Annual Retreat, University of Pennsylvania, Philadelphia PA
Feb, 2014	"Neurons to Neuroimaging", MacArthur Foundation Colloquium on Law, Neuroscience and Criminal Justice, Nashville, TN
Nov, 2013	"Measuring Visual Cortex without Vision", Oxford University, Oxford, UK
June, 2013	"Measuring Visual Cortex without Vision", Optical Society of America Fall Vision Meeting, Houston TX

June, 2013	"Inferring neuronal tuning from fMRI: adaptation and pattern information", Advanced fMRI Course, Organization for Human Brain Mapping Annual Meeting, Seattle, Washington
April, 2013	"Measuring Visual Cortex without Vision", Princeton University Neuroimaging Group, Princeton NJ
April, 2013	“Primer of Behavioral Neurology”, American Academy of Neurology, New Orleans, LA

Bibliography: (Include only relevant publication categories. While the precise format can be individualized, each entry should contain all authors and inclusive page numbers.)

Patents (Pending):

1. **GK Aguirre**, D Brainard, M Spitschan. (2016). ROBUST TARGETING OF PHOTOSENSITIVE MOLECULES. US Patent Number: 20160073922

Research Publications, peer reviewed (print or other media):

1. **GK Aguirre**, JA Detre, DC Alsop, M D'Esposito. (1996). The parahippocampus subserves topographical learning in man. Cerebral Cortex, 6, 823-829.
2. JA Detre, DC Alsop, **GK Aguirre**, MR Sperling. (1996). Coupling of cortical and thalamic ictal activity in human partial epilepsy: demonstration by functional magnetic resonance imaging. Epilepsia, 37, 657-661.
3. LT Zorrilla, **GK Aguirre**, E Zarahn, TD Cannon, M D'Esposito. (1996). Activation of the prefrontal cortex during judgments of recency: a functional MRI study. Neuroreport, 7, 2803-2806.
4. **GK Aguirre**, M D'Esposito. (1997). Environmental knowledge is subserved by separable dorsal/ventral neural areas. Journal of Neuroscience, 17, 2512-2518.
5. E Zarahn, **GK Aguirre**, M D'Esposito. (1997). Empirical analyses of BOLD fMRI statistics. I. Spatially unsmoothed data collected under null-hypothesis conditions. Neuroimage, 5, 179-197.
6. **GK Aguirre**, E Zarahn, M D'Esposito. (1997). Empirical analyses of BOLD fMRI statistics. II. Spatially smoothed data collected under null-hypothesis and experimental conditions. Neuroimage, 5, 199-212.
7. M D'Esposito, JA Detre, **GK Aguirre**, M Stallcup, DC Alsop, LJ Tippet, MJ Farah. (1997). A functional MRI study of mental image generation. Neuropsychologia, 35, 725-730.
8. M D'Esposito, E Zarahn, **GK Aguirre**, RK Shin, P Auerbach, JA Detre. (1997). The effect of pacing of experimental stimuli on observed functional MRI activity. Neuroimage, 6, 113-121.
9. SL Thompson-Schill, M D'Esposito, **GK Aguirre**, MJ Farah. (1997). Role of left inferior prefrontal cortex in retrieval of semantic knowledge: a reevaluation.

Proceedings of the National Academy of Sciences of the United States of America, 94, 14792-14797.

10. E Zarahn, **GK Aguirre**, M D'Esposito. (1997). A trial-based experimental design for fMRI. Neuroimage, 6, 122-138.
11. **GK Aguirre**, E Zarahn, M D'Esposito. (1998). An area within human ventral cortex sensitive to "building" stimuli: evidence and implications. Neuron, 21, 373-383.
12. **GK Aguirre**, E Zarahn, M D'Esposito. (1998). The variability of human BOLD hemodynamic responses. NeuroImage, 8, 360-369.
13. **GK Aguirre**, E Zarahn, M D'Esposito. (1998). The inferential impact of global signal covariates in functional neuroimaging analyses. NeuroImage, 8, 302-306.
14. **GK Aguirre**, E Zarahn, M D'Esposito. (1998). A critique of the use of the Kolmogorov-Smirnov (KS) statistic for the analysis of BOLD fMRI data. Magnetic Resonance in Medicine, 39, 500-505.
15. M D'Esposito, **GK Aguirre**, E Zarahn, D Ballard, RK Shin,J Lease. (1998). Functional MRI studies of spatial and nonspatial working memory. Cogn Brain Res, 7, 1-13.
16. M D'Esposito, D Ballard, **GK Aguirre**, E Zarahn. (1998). Human prefrontal cortex is not specific for working memory. NeuroImage, 8, 274-282.
17. **GK Aguirre**, E Zarahn, M D'Esposito. (1998). Neural components of topographical representation. PNAS USA, 95, 839-846.
18. JA Detre, L Maccotta, D King, DC Alsop, G Glosser, M D'Esposito, E Zarahn, **GK Aguirre**, JA French. (1998). Functional MRI lateralization of memory in temporal lobe epilepsy. Neurology, 50, 926-932.
19. **GK Aguirre**, MJ Farah. (1998). Human visual object recognition: what have we learned from neuroimaging? Psychobiology, 26, 322-332.
20. M D'Esposito, E Zarahn, **GK Aguirre**. (1999). Event-related functional MRI: Implications for cognitive psychology. Psychological Bulletin, 125.
21. MJ Farah, **GK Aguirre**. (1999). Imaging visual recognition: PET and fMRI studies of the functional anatomy of human visual recognition. Trends in Cognitive Sciences, 3, 179-186.
22. SL Thompson-Schill, **GK Aguirre**, M D'Esposito, MJ Farah. (1999). A neural basis for category and modality specificity of semantic knowledge. Neuropsychologia, 37, 671-676.
23. **GK Aguirre**, R Singh, M D'Esposito. (1999). Stimulus inversion and the responses of face and object-sensitive cortical areas. NeuroReport, 10, 189-194.
24. E Zarahn, **GK Aguirre**, M D'Esposito. (1999). Temporal isolation of the neural substrates of spatial mnemonic processing with fMRI. Cognitive Brain Research, 7, 255-268.

25. M D'Esposito, E Zarahn, **GK Aguirre**, B Rypma. (1999). The effect of normal aging on coupling of neural activity to the BOLD hemodynamic response. NeuroImage, 10, 6-14.
26. **GK Aguirre**, M D'Esposito. (1999). Topographical disorientation: a synthesis and taxonomy. Brain, 122, 1613-1628.
27. E Zarahn, **GK Aguirre**, M D'Esposito. (2000). Replication and further studies of neural mechanisms of spatial mnemonic processing in humans. Cogn Brain Res, 9, 1-17.
28. M D'Esposito, D Ballard, E Zarahn, **GK Aguirre**. (2000). The Role of Prefrontal Cortex in Sensory Memory and Motor Preparation: An Event-Related fMRI Study. NeuroImage, 11, 400-408.
29. DY Kimberg, **GK Aguirre**,M D'Esposito. (2000). Modulation of task-related neural activity in task-switching: an fMRI study. Cognitive Brain Research, 10, 189-196.
30. DY Kimberg, **GK Aguirre**, J Lease, M D'Esposito. (2001). Cortical effects of bromocriptine, a D-2 dopamine receptor agonist, in human subjects, revealed by fMRI. Human Brain Mapping, 12, 246-257.
31. **GK Aguirre**, JA Detre, E Zarahn, D C Alsop. (2002). Experimental design and the relative sensitivity of BOLD and perfusion fMRI. NeuroImage, 15, 488-500.
32. TA Polk, M Stallcup, **GK Aguirre**, DC Alsop, M D'Esposito, JA Detre,MJ Farah. (2002). Neural specialization for letter recognition. Journal of Cognitive Neuroscience, 14, 145-159.
33. SM Schaefer, DC Jackson, RJ Davidson, **GK Aguirre**, DY Kimberg, SL Thompson-Schill. (2002). Modulation of amygdala activity by conscious maintenance of negative emotion. Journal of Cognitive Neuroscience. 14, 913-921.
34. **GK Aguirre**, JM Ellenbogen, J Pollard, ED Stolzenberg, SL Galetta. (2002). Amyloid angiopathy. Neurology, 59, 1656
35. J-J Wang, **GK Aguirre**, DY Kimberg, AC Roc, L Li, MD Schnall, JA Detre. (2003). Arterial Spin Labeling Perfusion fMRI with Very Low Task Frequency. Magn Reson Med 49, 796-802.
36. J-J Wang, **GK Aguirre**, DY Kimberg, JA Detre. (2003). Empirical Analyses of Null-Hypothesis Perfusion fMRI Data at 1.5 and 4T. NeuroImage 19, 1449-62.
37. AP Jha, SA Fabian, **GK Aguirre** (2004). The role of prefrontal cortex in resolving distractor interference. Cogn Affect Behav Neurosci 4, 517-27.
38. J-J Wang, Z Wang, **GK Aguirre**, JA Detre (2005). To smooth or not to smooth? ROC analysis of perfusion fMRI data. Magn Reson Imaging 23, 75-81.
39. **GK Aguirre**, JA Detre, J Wang, (2005) Perfusion fMRI for functional neuroimaging, Int Rev Neurobiol, 66 213-36.

40. RA Epstein, JS Higgins, W Parker, **GK Aguirre**, S Cooperman (2006) Cortical correlates of face and scene inversion: A comparison. Neuropsychologia 44(7): 1145-1158.
41. IR Olson, H Rao, KS Moore, J Wang, JA Detre, **GK Aguirre** (2006) Using perfusion fMRI to measure continuous changes in neural activity with learning. Brain Cogn 60, 262-71.
42. M Bedny, **GK Aguirre**, SL Thompson-Schill (2007) Item analysis in functional magnetic resonance imaging. Neuroimage. 35, 1093-1102.
43. **GK Aguirre** (2007) Continuous carry-over designs for fMRI. Neuroimage. 35, 1480-1494.
44. **GK Aguirre**, AM Komaromy, AV Cideciyan, DH Brainard, TS Aleman, AJ Roman, BB Avants, JC Gee, M Korczykowski, WW Hauswirth, GM Acland, GD Aguirre, SG Jacobson (2007) Visual Cortex Intact and Responsive Despite Early Retinal Blindness from RPE65 Mutation. PLoS Med, 4(6), 230.
45. AV Cideciyan, TS Aleman, SG Jacobson, H Khanna, A Sumaroka, **GK Aguirre**, et al. (2007). Centrosomal-ciliary gene cep290/nphp6 mutations result in blindness with unexpected sparing of photoreceptors and visual brain: Implications for therapy of leber congenital amaurosis. Hum Mutat, 28(11), 1074-1083.
46. Z Wang, **GK Aguirre**, H Rao, J Wang, MA Fernandez-Seara, AR Childress, et al. (2007). Empirical optimization of ASL data analysis using an ASL data processing toolbox: Asltbx. Magn Reson Imaging.
47. GA Stefanatos, WQ Joe, **GK Aguirre**, JA Detre, G Wetmore (2007). Activation of human auditory cortex during speech perception: Effects of monaural, binaural, and dichotic presentation. Neuropsychologia.
48. DJ Libon, L Massimo, P Moore, HB Coslett, A Chatterjee, **GK Aguirre**, A Rice, L Vesely, M Grossman (2007). Screening for Frontotemporal Dementias and Alzheimer's Disease with the Philadelphia Brief Assessment of Cognition: A Preliminary Analysis. Dement Geriatr Cogn Disord. 24(6):441-447
49. A Thomas, K Lawler, IR Olson, **GK Aguirre** (2008). The Philadelphia face perception battery. Archives of Clinical Neuropsychology. 23(2): 175-187
50. A Harris, **GK Aguirre** (2008). The representation of parts and wholes in face-selective cortex. Journal of Cognitive Neuroscience. 20(5): 863-878
51. PD Radoeva, S Prasad, DH Brainard, **GK Aguirre**. (2008) Neural activity within area V1 reflects unconscious visual performance in a case of Blindsight. Journal of Cognitive Neuroscience. 20(11), 1-13
52. A Harris, **GK Aguirre** (2008). Effects of Parts, Wholes, and Familiarity on Face-Selective Responses in MEG. Journal of Vision. 8(10): 1-12
53. A Chatterjee, A Thomas, S Smith, **GK Aguirre**. (2009) The Neural Response to Facial Beauty. Neuropsychology. 23(2): 135-43

54. L Yan, Y Zhyo, Y Ye, J An, **GK Aguirre**, JJ Wang (2009). Physiological Origin of Low Frequency Drift in BOLD FMRI. Magnetic Resonance in Medicine. 61(4): 819-27
55. D Drucker, **GK Aguirre** (2009). Different spatial scales of object similarity representation in lateral and ventral LOC. Cerebral Cortex. 19(10), 2269-2280.
56. D Drucker, WT Kerr, **GK Aguirre**. (2009) Distinguishing conjoint and independent neural tuning for stimulus features with fMRI adaptation. J. Neurophysiology. 101(6): 3310-24 [Selected as an F1000 paper.]
57. EB Wencil, **GK Aguirre**, HB Coslett, A Chatterjee (2010). Carving the clock at its component joints: Neural bases for interval timing. J Neurophysiology. 104: 160-168
58. A Harris, **GK Aguirre**. (2010). Neural Tuning for Face Wholes and Parts in Human Fusiform Gyrus Revealed by fMRI Adaptation. J Neurophysiology. 104(1):336-45
59. DA Kahn, AM Harris, D Wolk, **GK Aguirre**. (2010) Dissociable temporal components of neural similarity in face perception: An ERP study. Journal of Vision, 10(10):12, 1-12
60. LK Morgan, SP MacEvoy, **GK Aguirre**, and RA Epstein. (2011). Distances between real-world locations are represented in the human hippocampus. Journal of Neuroscience, 31(4):1238-1245.
61. **GK Aguirre**, MG Mattar, L Magis-Weinberg. (2011) de Bruijn cycles for neural decoding. NeuroImage. 56: 1293–1300
62. R Datta, JA Detre, **GK Aguirre**, B Cucchiara. (2011). Absence of grey matter changes in patients with migraine. Cephalalgia. 14:1452-8
63. TS Aleman, AV Cideciyan, **GK Aguirre**, WC Huang, CL Mullins, AJ Roman, A Sumaroka, MB Olivares , FF Tsai , SB Schwartz , LH Vandenberghe, MP Limberis, EM Stone, P Bell, JM Wilson, SG Jacobson (2011) Human CRB1-associated retinal degeneration: comparison with the rd8 Crb1-mutant mouse model. Investigative Ophthalmology and Visual Science.
64. DA Kahn, **GK Aguirre**. (2012) Confounding of norm-based and adaptation effects in brain responses. NeuroImage 60(4): 2294–2299
65. **GK Aguirre** (2012) FIASCO, VoxBo, MEDx: Behind the Code. NeuroImage 62(2): 765–767
66. **GK Aguirre** and JA Detre (2012) The development and future of perfusion fMRI for dynamic imaging of human brain activity. NeuroImage 62(2): 1279–1285
67. R Datta, J Lee, J Duda, BB Avants, CH Vite, B Tseng, JC Gee, GD Aguirre, **GK Aguirre**. (2012) A digital atlas of the dog brain. PLoS ONE 7(12): e52140
68. NC Benson, OH Butt, R Datta, PD Radoeva, DH Brainard, **GK Aguirre** (2012) The retinotopic organization of striate cortex is well predicted by surface topology. Current Biology 22(21): 2081–2085

69. R Datta, **GK Aguirre**, S Hu, JA Detre, B Cucchiara (2013) Interictal cortical hyperresponsiveness in migraine is directly related to the presence of aura. Cephalalgia 33(6):365-74
70. BC Cucchiara, R Wolf, L Nagae, Q Zhang, S Kasner, R Datta, **GK Aguirre**, J Detre 2013) Migraine with aura is associated with an incomplete circle of Willis: results of a prospective observational study. PLOS One
71. OH Butt, NC Benson, R Datta, **GK Aguirre** (2013) The fine-scale functional connectivity of striate cortex in sighted and blind people. Journal of Neuroscience 33 (41), 16209-16219
72. NC Benson, OH Butt, DH Brainard, **GK Aguirre** (2014) Correction of distortion in flattened representations of the cortical surface allows prediction of V1-V3 functional organization from anatomy. PLoS Computational Biology
73. M Spitschan, S Jain, Dh Brainard, **GK Aguirre** (2014) Opponent melanopsin and S-cone signals in the human pupillary light response. PNAS. 11(43) 15568–15572
74. B Cucchiara, R Datta, **GK Aguirre**, KE Idoko, J Detre (2015) Measurement of visual sensitivity in migraine: Validation of two scales and correlation with visual cortex activation. Cephalalgia
75. A Persichetti, **GK Aguirre**, S Thompson-Schill (2015) Value is in the eye of the beholder: Early visual cortex codes monetary value of objects during a diverted attention task. JoCN
76. AV Cideciyan, **GK Aguirre**, SG Jacobson, O Butt, SB Schwartz, M Swider, AJ Roman, S Sadigh, WW Hauswirth (2015) Pseudo-fovea formation after gene therapy for RPE65-LCA. IOVS
77. OH Butt, NC Benson, R Datta, **GK Aguirre** (2015) Hierarchical and homotopic correlations of spontaneous neural activity within the visual cortex of the sighted and blind. Frontiers in Neuroscience
78. S Bishop, **GK Aguirre**, AO Nunez-Elizalde, D Toker (2015) Seeing the world through non rose-colored glasses: anxiety and the amygdala response to blended expressions. Frontiers in Neuroscience
79. M Spitschan, **GK Aguirre**, DH Brainard (2015) Selective stimulation of penumbral cones reveals perception in the shadow of retinal blood vessels. PLoS One
80. AS Persichetti, SL Thompson-Schill, OH Butt, DH Brainard, **GK Aguirre** (2015) fMRI adaptation reveals a non-categorical representation of hue in early visual cortex. Journal of Vision
81. M Spitschan, DH Brainard, **GK Aguirre** (2016) Human visual cortex responses to rapid cone and melanopsin directed flicker. J Neuroscience
82. MG Mattar, DA Kahn, S Thompson-Schill, **GK Aguirre**. (2016) Varying timescales of stimulus integration unite neural adaptation and prototype formation. Current Biology

83. M Spitschan, **GK Aguirre**, DH Brainard, AM Sweeney (2016) Variation of outdoor illumination as a function of solar elevation and light pollution. Nature Scientific Reports
84. LM Downs, EM Scott, AV Cideciyan, S Iwabe, V Dufour, KL Gardiner, S Genini, LF Marinho, A Sumaroka, MS Kosyk, M Swider, **GK Aguirre**, SG Jacobson, WA Beltran, GD Aguirre (2016) Overlap of Abnormal Photoreceptor Development and Progressive Degeneration in Leber Congenital Amaurosis Caused by NPHP5 Mutation. Human Molecular Genetics 2016; doi: 10.1093/hmg/ddw254
85. **GK Aguirre**, R Datta, NC Benson, S Prasad, SG Jacobson, AV Cideciyan, H Bridge, KE Watkins, OH Butt, AB Daina, L Brandes, ED Gennatas (2016) Patterns of individual variation in visual pathway structure and function in the sighted and blind. PloS one. 2016 Nov 3;11(11):e0164677.
86. **GK Aguirre**, OH Butt, R Datta, AJ Roman, A Sumaroka, SB Schwartz, AV Cideciyan, SG Jacobson (2017) Post-Retinal Structure and Function in Severe Congenital Photoreceptor Blindness Caused by Mutations in the *GUCY2D* Gene. IOVS
87. M Olkkonen, **GK Aguirre**, R Epstein (2017) Expectation modulates stimulus repetition priming under high stimulus variability. Journal of Vision
88. M Spitschan, A Bock, J Ryan, G Frazzetta, DH Brainard, **GK Aguirre** (2017) The Human Visual Cortex Response to Melanopsin-Directed Stimulation is Accompanied by a Distinct Perceptual Experience. PNAS
89. D Irwin, C McMillan, S Xie, K Rascovsky, V van Deerlin, HB Coslett, R Hamiltopn, **GK Aguirre**, E Lee, V Lee, J Trojanowski, M Grossman. (2017) Asymmetry of post-mortem neuropathology in behavioral-variant frontotemporal dementia. Brain
90. M Mattar, NF Wymbs, AS Bock, **GK Aguirre**, ST Grafton, DS Bassett. (2018) Predicting future learning from baseline network architecture. Neuroimage
91. MG Mattar, M Olkkonen, RA Epstein, **GK Aguirre** (2018) Adaptation decorrelates shape representations. Nature Communications. https://doi.org/10.1101/249045
92. H McAdams, A Igdaolva, M Spitschan, DH Brainard, **GK Aguirre** (2018) Pulses of melanopsin-directed contrast produce highly reliable pupil responses that are insensitive to a change in background radiance. IOVS. PMID: 30481278
93. M Chen, JC Gee, JL Prince, **GK Aguirre** (2018). 2D Modeling and Correction of Fan-Beam Scan Geometry in OCT. In Computational Pathology and Ophthalmic Medical Image Analysis (pp. 328-335). Springer, Cham.
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