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memo

TO: John Reynolds
Chair, Appointments Committee

FROM: Tom Albright and John Reynolds

DATE: January 25, 2023

RE: Reappointment of Geoff Boynton as Adjunct Professor

Dear John,

We are writing to request that Geoffrey Boynton be reinstated as an Adjunct faculty member. Dr. Boynton is a leading figure in the study of visual attention. As a former Salk faculty member, he values his connection to the Salk Institute. When we recently wrote him to ask him if he would like to continue his Adjunct appointment, he said he would love to be appointed, and identified three concrete ways he could contribute to the Institute — advising on thesis committees, helping with statistical consulting and presenting zoom lectures on topics in computational neuroscience. These seem to us to be significant potential contributions, and both support his reappointment. Please let us know if there is additional information, we can provide that would help you and APCOM to reach a decision.

Thank you,

Tom Albright

Salk Adjunct Service/Contributions Form

Name: Geoffrey Boynton **Appointment Start Date:** Jul 1, 2023
Sponsors: John Reynolds, Tom Albrigh

To be eligible for appointment and reappointment in the Adjunct series, appointees are expected to be engaged in **at least two** Institute-related activities outlined below. If you are being considered for your first Adjunct Professor appointment, provide information about your plans to engage in the Salk community and select any of the activities you would be interested in below. If you are being considered for reappointment, select your ongoing activities and give a brief summary of your engagement in each activity during the past appointment period. Also provide a summary of your plans to engage in the Salk activities during the next appointment period.

Salk Activities (list the course/seminar titles, committees, and student names if known)
** Please note research collaborations with a Salk Faculty sponsor(s) do not qualify as Institute-related activities expected for an Adjunct position*

- ☒ Giving Seminars, such as those hosted by Sponsors or by the Institute
- ☐ Teaching in Salk-organized courses
- ☒ Serving on UCSD Student Review committees and/or Thesis Committees in Salk Labs
- ☐ Reviewing Postdoctoral and other Internal Grants
- ☐ Participating in Salk's outreach and educational efforts to recruit underrepresented minority student applicants
- ☐ Consulting on Salk scientific initiatives or multi-PI grants
- ☐ Serving on Faculty Review Committees
- ☐ Promoting award and nomination opportunities for Salk Faculty
- ☐ Organizing or participating on Salk Meetings or Conferences
- ☒ Other

Salk Service Summary & Plans: Describe your plans to engage in the activities marked above during the next appointment period (i.e.: Salk Course or Seminar Titles, names of Student or Faculty review committee, description of contributions to grants, etc. if unable to fit above). If you are being considered for reappointment, also describe your engagement in the Salk activities during the last appointment period. You may attach a supplemental letter with these activities as needed.

I'd love to be reappointed. I'd be happy advise on thesis committees, help with statistical consulting, or give zoom lectures on various topics in computational neuroscience.

Geoffrey M. Boynton

Curriculum Vitae
May 13, 2022

Professor
University of Washington
Department of Psychology
gboynton@uw.edu
(206) 588-1879

Education

Ph.D.	University of California, Santa Barbara, Cognitive and Perceptual Sciences, 1994 Dissertation Title: "Temporal sensitivity of the human visual system measured by masking"
M.A.	University of California, Santa Barbara, Mathematics, 1989
B.A.	University of California, San Diego, Applied Mathematics, Scientific Programming, 1987

Academic Positions

2014-present	Professor, Department of Psychology, University of Washington
2007-2014	Associate Professor, Department of Psychology, University of Washington
2007- present	Associate Adjunct Professor, Department of Radiology, University of Washington
2004-2007	Associate Professor of Systems Neurobiology, Salk Institute
1998- 2004	Assistant Professor of Systems Neurobiology Salk Institute
1998-present	Assistant Adjunct Professor, Department of Neuroscience University of California, San Diego
1998-present	Assistant Adjunct Professor, Department of Psychiatry University of California, San Diego
2000-present	Co-director, Regional Center for Brain Imaging University of California, San Diego
1994-1998	Postdoctoral Fellow in Psychology Stanford University Sponsor: David J. Heeger

Academic Affiliations/Responsibilities

Director, Center for Human Neuroscience-MRI 2020-present

Elected Member to the Board of Directors, Vision Sciences Society, 2020-present, president-elect for 2024

Editorial Board for the *Journal of Vision*, 2007-present

Elected Member of the Society for Experimental Psychologists, 2009, Executive Committee member 2011

Advisory Committee, University of Nevada Reno Neuroimaging Center and COBRE grant, 1/2013 – present

External Advisor, U.C. Davis Neuroscience Core Grant, 2014 - present

Member, Local Organizing Committee, Human Brain Mapping Conference, 2013

Abstract Review Committee, Vision Sciences Society, 2009 – 2020

Editorial Board for *Vision Research*, 5/2005 – 2015

Society for Neuroscience Trainee Professional Development Award Selection Committee, 2018-2020

Summer Course on Computational Vision, Cold Spring Harbor, Course organizer and instructor, Summer 2008, 2010, 2012, 2014, 2016, 2018, 2022

UW committees/duties/service

Director, Center for Human Neuroscience – MRI, 2020-present (Imaging Center opens June, 2021)

Member, Strategic Planning Committee, Department of Psychology, 5/2015-2018

Area Head, Cognition and Perception within the Department of Psychology 5/2010 – 5/2015

Member, University of Washington Center for Brain Imaging Director's Committee 4/2007 – present

Guthrie Prize Committee, 2011, 2012, 2013, 2014

Grants

NIH R01EY031312 Boynton (CO-PI) with Ione Fine 05/2021 – 04/2026
"Learning to see again: biological constraints on cortical plasticity and the implications for sight restoration technologies"
Direct costs year 1: $250,000. Total award 1,880,561

NIH 1F32EY030320-0A1 Boynton (PI)
"How does dividing attention limit object recognition and modify relevant neural activity? 06/09/2020-06/08/2023
NRSA Award for postdoc Dina Popovkina

<u>Completed</u>

NIH R01 EY012925-06 Boynton (PI) 9/1/14 – 8/31/19
"Attention Effects in the Human Visual Cortex"
Direct costs year 1: $250,000. Total award: $1,250,000

NSF 1826836 Boynton (PI) 9/10/2018 – 8/31/2020
MRI: Acquisition of a Siemens MAGNETOM Prisma 3-Tesla MRI
Direct costs: $2,231,298
This is an NSF Major Research Instrumentation Grant that will support the purchase of a Siemens 3T scanner on the campus of Arts and Sciences at the University of Washington

NSF 0619829 Boynton (PI) Award date 4/6/2009
Acquisition of a 3-Tesla Magnetic Resonance Imaging (MRI) Scanner for Functional Studies of the Human Brain
Direct costs $2,000,000
This is an NSF Major Research Instrumentation Grant that supported the purchase of a Philips 3T Achieva scanner located in the department of Radiology at the University of Washington

NIH F32 EY026785 "The cortical mechanisms of divided attention in word recognition" 09/01/16-08/30/17.
NRSA award for postdoc Alexander White

NIH 5 F32 EY015564 "The Neuronal Basis of Sleep-Dependent Learning". 12/1/03-11/30/06. NRSA award for postdoc Sara Mednick

NIH F32 EY017261 "Role of Attention and Reward in Selective Perception". 11/1/06-10/31/09. NRSA award for posdoc John Serences

NIH 5 F32 EY07028 "Attention in the Human Visual System" 1/17/00 – 1/16/03 NRSA award for postdoc Robert Duncan

NIH R01 EY12925-01 "Spatial Attention Effects in the Human Visual Cortex " 100% effort
Principal Investigator, 8/16/99 - 8/15/04, Direct costs year 1: $221,400, Total award: $1,175,393

Dana Foundation Grant for "Characterizing the Neural Basis of the fMRI Signal", (2002-2003) Total award: $100,000

Students/Postdocs Supervised

Current
Kelly Chang, doctoral student, Department of Psychology, University of Washington
Dina Popovkina, postdoc, Department of Psychology, University of Washington

Completed
Miranda Petty, PhD in 2021, Department of Psychology, University of Washington
Alexander White, postdoc 2020, Department of Psychology, University of Washington
James Moreland, PhD in 2020, Department of Psychology, University of Washington
Bjorn Hubert-Wallander, PhD in 2017, Department of Psychology, University of Washington
Paola Binda, postdoc, Department of Psychology University of Washington
Erik Runeson, PhD in 2013, doctoral student, Department of Psychology, University of Washington
Zach Ernst, PhD in 2012, Department of Psychology, University of Washington
Jeff Lin, PhD in 2011, Department of Psychology, University of Washington
Kathryn Murray, Ph.D in 2009, Department of Neurosciences, University of California, San Diego
Vivian Ciaramitaro, Ph.D. postoc, Systems Neurobiology
Minna Ng., doctoral student, Department of Psychology, University of California, San Diego
(co supervisor with Ione Fine)
John Serences, Ph. D. postdoc, Systems Neurobiology, Salk Institute
Sara Mednick, Ph.D., postdoc, Systems Neurobiology, Salk Institute
Eva Finney, postoc, Systems Neurobiology, Salk Institute
Giedrius Buracas, Ph.D., postdoc, Systems Neurobiology, Salk Institute
Robert O. Duncan, Ph.D., postdoc, Systems Neurobiology, Salk Institute
August Tuan, Ph.D. in 2006, Department of Neuroscience, University of California, San Diego
Edward Hubbard, Ph. D. in 2004, Department of Psychology, University of California, San Diego
(co supervisor with V.S. Ramachandran)
Melissa Saenz, Ph.D. in 2003, Department of Neuroscience, University of California, San Diego

Publications

A major role for retrieval and/or comparison in the set-size effects of change detection
JC Moreland, J Palmer, **Boynton, G.M.** (2021) Journal of vision 21 (13), 2-2

Johnson, M. L., Palmer, J., Moore, C. M., & **Boynton, G. M.** (2020). Endogenous cueing effects for detection can be accounted for by a decision model of selective attention. Psychon Bull Rev. doi:10.3758/s13423-019-01698-3

Sprague, T. C., **Boynton, G. M.,** & Serences, J. T. (2019). The Importance of Considering Model Choices When Interpreting Results in Computational Neuroimaging. eNeuro, 6(6). doi:10.1523/ENEURO.0196-19.2019

White, A. L., **Boynton, G. M.,** & Yeatman, J. D. (2019). The link between reading ability and visual spatial attention across development. Cortex, 121, 44-59. doi:10.1016/j.cortex.2019.08.011

White, A. L., **Boynton, G. M.,** & Yeatman, J. D. (2019). You Can't Recognize Two Words Simultaneously. Trends Cogn Sci, 23(10), 812-814. doi:10.1016/j.tics.2019.07.001

White, A. L., Palmer, J., & **Boynton, G. M.** (2019). Visual word recognition: Evidence for a serial bottleneck in lexical access. Atten Percept Psychophys. doi:10.3758/s13414-019-01916-z

White, A. L., Palmer, J., **Boynton, G. M.,** & Yeatman, J. D. (2019). Parallel spatial channels converge at a bottleneck in anterior word-selective cortex. Proc Natl Acad Sci U S A, 116(20), 10087-10096. doi:10.1073/pnas.1822137116

White A.L., Palmer J., **Boynton G.M.** and Yeatman, J.D. (2019). Parallel spatial channels converge at a bottleneck in anterior word-selective cortex. Proc. Natl. Acad. Sci. 10.1073/pnas.1822137116

Beyeler M., Nanduri D., Weiland J.D., Rokem A., **Boynton G.M**. and Fine I. (2019). A model of ganglion axon pathways accounts for percepts elicited by retinal implants. Sci Rep, 9(1), 9199.White A.L., Palmer J. and Boynton G.M. (2018). Evidence of Serial Processing in Visual Word Recognition. Psychol Sci, .29 (7), 1027-1071

White A.L., Palmer J. and **Boynton G.M.** (2018). Evidence of Serial Processing in Visual Word Recognition. Psychol Sci, .

Beyeler, M., Rokem, A., **Boynton, G. M**., & Fine, I. (2017). Learning to see again: biological constraints on cortical plasticity and the implications for sight restoration technologies. J Neural Eng, 14(5), 051003. doi:10.1088/1741-2552/aa795e

Chang, K. H., Thomas, J. M., **Boynton, G. M.,** & Fine, I. (2017). Reconstructing Tone Sequences from Functional Magnetic Resonance Imaging Blood-Oxygen Level Dependent Responses within Human Primary Auditory Cortex. Front Psychol, 8, 1983. doi:10.3389/fpsyg.2017.01983

Moreland, J. C., & **Boynton, G. M.** (2017). A neurophysiological explanation for biases in visual localization. Atten Percept Psychophys, 79(2), 553-562. doi:10.3758/s13414-016-1251-z

White, A. L., Runeson, E., Palmer, J., Ernst, Z. R., **& Boynton, G. M.** (2017). Evidence for unlimited capacity processing of simple features in visual cortex. J Vis, 17(6), 19. doi:10.1167/17.6.19Jiang F., Stecker G.C., **Boynton G.M.** and Fine I. Early Blindness Results in Developmental Plasticity for Auditory Motion Processing within Auditory and Occipital Cortex. Front Hum Neurosci, 2016; 10, 324.

Jiang F., Stecker G.C., **Boynton G.M.** and Fine I. (2016). Early Blindness Results in Developmental Plasticity for Auditory Motion Processing within Auditory and Occipital Cortex. Front Hum Neurosci, 10, 324.

Hubert-Wallander B, **Boynton G.M.**, Not all summary statistics are made equal: Evidence from extracting summaries across time. Journal of vision. 2015;15(4):5.

Fine I, **Boynton G.M.**. Pulse trains to percepts: the challenge of creating a perceptually intelligible world with sight recovery technologies. Philosophical transactions of the Royal Society of London Series B, Biological sciences. 2015;370(1677):20140208.

Huber E, Webster JM, Brewer AA, MacLeod DI, Wandell BA, **Boynton GM**, Wade AR, Fine I. A Lack of Experience-Dependent Plasticity After More Than a Decade of Recovered Sight. Psychological science. (2015). doi: 10.1177/0956797614563957. PubMed PMID: 25740284.

Thomas JM, Huber E, Stecker GC, **Boynton GM**, Saenz M, Fine I. Population receptive field estimates of human auditory cortex. NeuroImage. (2015);105:428-39. doi: 10.1016/j.neuroimage.2014.10.060. PubMed PMID: 25449742; PMCID: 4262557.

Bock AS, Saenz M, Tungaraza R, Boynton GM**,** Bridge H, Fine I. Visual callosal topography in the absence of retinal input. NeuroImage. (2013) ;81:325-34. doi: 10.1016/j.neuroimage.2013.05.038. PubMed PMID: 23684881; PMCID: 3742332.

Ernst, Z.R., **Boynton, G.M.,** and Jazayeri, M. (2013) The Spread of Attention across Features of a Surface (J.Neurophysiol.)

Binda, P., Thomas, J.M., **Boynton, G.M.**, and Fine, I. (2013) Minimizing Biases in Estimating the Reorganization of Human Visual Areas with BOLD Retinotopic Mapping (Journal of Vision)

Runeson, E., **Boynton, G. M.,** & Murray, S. O. (2013). Effects of Task and Attentional Selection on Responses in Human Visual Cortex. J Neurophysiol.

Joo, S. J., **Boynton, G. M**., & Murray, S. O. (2012). Long-range, pattern-dependent contextual effects in early human visual cortex. Curr Biol, 22(9), 781-786.

Ernst, Z. R., Palmer, J., & **Boynton, G. M**. (2012). Dividing attention between two transparent motion surfaces results in a failure of selective attention. J Vis, 12(12)

Nanduri, D., Fine, I., Horsager, A., **Boynton, G. M.,** Humayun, M. S., Greenberg, R. J., & Weiland, J. D. (2012). Frequency and amplitude modulation have different effects on the percepts elicited by retinal stimulation. Invest Ophthalmol Vis Sci, 53(1), 205-214. doi: 10.1167/iovs.11-8401

Ciaramitaro, V. M., J. F. Mitchell, Stoner, G. and **Boynton, G.M.** (2011). "Object-based attention to one of two superimposed surfaces alters responses in human early visual cortex." J Neurophysiol. 105: 1258-1265

Horsager, A., **G. M. Boynton**, Fine, I. (2011). "Temporal interactions during paired-electrode stimulation in two retinal prosthesis subjects." Invest Ophthalmol Vis Sci 52(1): 549-557.

Horsager, A., Greenwald, S. H., Weiland, J. D., Humayun, M. S., Greenberg, R. J., McMahon, M. J., **Boynton, G.M**. Fine, I. (2009). Predicting visual sensitivity in retinal prosthesis patients. *Invest Ophthalmol Vis Sci, 50*(4), 1483-1491

Lin JY, Hubert-Wallander B, Murray SO, **Boynton G.M.**. Rapid and reflexive feature-based attention. J Vis. 2011;11(12).

Lin, J.Y., Pype, A.D., Murray, S.O., & **Boynton, G.M**. Enhanced memory for scenes presented at behaviorally relevant points in time. (2010) *PLoS Biol, 8* (3), e1000337.

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Horsager, A., Greenwald, S.H., Weiland, J.D., Humayun, M.S., Greenberg, R.J., McMahon, M.J., **Boynton, G.M.**, & Fine, I. (2009). Predicting visual sensitivity in retinal prosthesis patients. *Invest Ophthalmol Vis Sci, 50* (4), 1483-1491.

Lin, J.Y., Murray, S.O., & **Boynton, G.M.** (2009). Capture of attention to threatening stimuli without perceptual awareness. *Curr Biol, 19* (13), 1118-1122.

Mednick, S.C., Drummond, S.P., Arman, A.C., & **Boynton, G.M.** (2008). Perceptual deterioration is reflected in the neural response: fMRI study of nappers and non-nappers. *Perception, 37* (7), 1086-1097.

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Serences JT, **Boynton GM** (2007) The representation of behavioral choice for motion in human visual cortex. J Neurosci 27:12893-12899.

Ciaramitaro VM, Buracas GT, **Boynton GM** (2007) Spatial and cross-modal attention alter responses to unattended sensory information in early visual and auditory human cortex. J Neurophysiol 98:2399-2413.

Serences, JT and **Boynton GM** (2007) Feature-Based Attentional Modulations in the Absence of Direct Visual Stimulation *Neuron*;55, 301–312

Buracas GT, **Boynton GM** (2007) The effect of spatial attention on contrast response functions in human visual cortex. *J Neurosci* 27:93-97.

Duncan RO**, Boynton GM** (2007) Tactile Hyperacuity Thresholds Correlate with Finger Maps in Primary Somatosensory Cortex (S1). *Cereb Cortex.*

Ng M, Ciaramitaro VM, Anstis S, **Boynton GM**, Fine I (2006) Selectivity for the configural cues that identify the gender, ethnicity, and identity of faces in human cortex. Proc Natl Acad Sci USA 103:19552-19557.

Boynton GM, Ciaramitaro VM, Arman AC (2006) Effects of feature-based attention on the motion aftereffect at remote locations. *Vision Res* 46:2968-2976.

Fine, I., Finney, E.M., **Boynton, G.M.**, and Dobkins, K.R. (2005) Comparing the Effects of Auditory Deprivation and Sign Language within the Auditory and Visual Cortex. J Cogn Neurosci 17 (10), 1621-1637

Mednick, S.A., Arman, C.A. and **Boynton, G.M.** (2005) The time-course and specificity of perceptual deterioration. *Proc. Natl. Acad. Sci.* ; 102 3881-3885.

Hubbard E.M., Ramachandran, V.S., and **Boynton, G.M.** (2005) Individual Differences among Grapheme-Color Synesthetes: Brain-Behavior Correlations. *Neuron* 45 975-985.

G.T. Buracas, G.T., Fine I, and **Boynton, G.M.** (2005) The Relationship between Task Performance and Functional Magnetic Resonance Imaging Response. *J. Neurosci* 25: 3023–3031.

Fine, I., Anderson, C.M., **Boynton, G.M.**, & Dobkins, K.R. (2004). The invariance of directional tuning with contrast and coherence. *Vision Res,* **44** (9), 903-913.

Boynton, G. M. and E. M. Finney. (2003) Orientation-specific adaptation in human visual cortex. *J Neurosci;* **23** (25): 8781-7.

Fine, I., A. R. Wade, Brewer, A. A. , May, M. G. , Goodman, D. F. , **Boynton, G. M**. ,Wandell B. A. and MacLeod D. I. (2003) Long-term deprivation affects visual perception and cortex. *Nature Neuroscience* **6**(9): 915-6.

Fine, I., D. I. MacLeod and **Boynton G.M.** (2003). Surface segmentation based on the luminance and color statistics of natural scenes. *J Opt Soc Am A Opt Image Sci Vis* **20**(7): 1283-91.

Duncan, R. O. and **Boynton, G.M.** (2003). Cortical magnification within human primary visual cortex correlates with acuity thresholds. *Neuron* **38**(4): 659-71.

Saenz, M., Buracas, G.T., and **Boynton, G.M.** (2003), Global Feature-Based Attention for Color and Motion, V*ision Research,* **43**:629 – 637

Saenz, M., Buracas, G.T., and **Boynton, G.M.** (2002) Global effects of feature-based attention in human visual cortex. *Nature Neuroscience*, **5**, 631-632.

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Wandell, B.A., Poirson, A.B., Newsome, W.T., Baseler,H.A. **Boynton,G.M**., Huk, A, Gandhi,S.P. and Sharpe, L.T., (1999) Color signals in human motion-selective cortex, *Neuron*, **24**, 901-909

Heeger, D.J., **Boynton, G.M.**, Demb J.B., Seidemann, E., and Newsome, W.T. (1999) Motion Opponency in Visual Cortex. *Journal of Neuroscience,* **19**, 7162-7174.

Gandhi, S.P., Heeger, D.J., and **Boynton, G.M.** (1999) Spatial Attention Affects Brain Activity in Human Primary Visual Cortex. *Proc. Natl. Acad. Sci.*, **96**, 3314-3319

Boynton, G.M., Demb, J.B., and Heeger, D.J. (1999) Neuronal Basis of Contrast Discrimination. *Vision Research*, **39**, 257-269

Boynton, G.M. and Foley, J.M. (1999) Temporal Sensitivity of Human Luminance Pattern Mechanisms Determined by Masking with Temporally Modulated Stimuli, *Vision Research*, **39**, 1641-1656

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Demb, J.B., **Boynton, G.M.**, Best, M., and Heeger, D.J. (1998) Psychophysical evidence for a magnocellular pathway deficit in dyslexia. *Vision Research*, **38**, 1555-1559

Demb, J.B., **Boynton, G.M.**, and Heeger, D.J. (1997) Brain activity in visual cortex predicts individual differences in reading performance, *Proc. Natl. Acad. Sci.* **4**,13363-13366

Boynton, G.M., Engel, S.A., Glover, G.H. and Heeger, D.J. (1996) Linear Systems Analysis of fMRI in Human V1, *Journal of Neuroscience*, **16**,4207-4221

Ashby, F.G., **Boynton, G.M.**, and Lee, W.W. (1994). Categorization response time with multidimensional stimuli. *Perception and Psychophysics*, **55**,11-27

Foley, J.M. and **Boynton, G.M.** (1993). Forward pattern masking and adaptation: Effects of duration, interstimulus interval, contrast, and spatial and temporal frequency. *Vision Research*, **33**,959-980

Foley, J.M. and **Boynton G.M.** (1993). A new model of human pattern vision mechanisms: analysis of the effects of masker orientation, phase and temporal frequency. *SPIE proceedings, Vol 2054, Computational Vision Based on Neurobiology*

Commentaries, Dispatches, Editorials and Reviews

Boynton, G. M., Engel, S. A., & Heeger, D. J. (2012). Linear systems analysis of the fMRI signal. Neuroimage,'doi':S1053-8119(12)

Boynton, G. M. (2011). Spikes, BOLD, attention, and awareness: a comparison of electrophysiological and fMRI signals in V1. J Vis, 11(5), 12,

Carrasco, M., Eckstein, M., Verghese, P., **Boynton, G.,** & Treue, S. (2009). Visual attention: Neurophysiology, psychophysics and cognitive neuroscience. Vision Res, 49(10), 1033-1036

Smith, A., Heeger, D., **Boynton, G.,** & Norcia, A. (2008). Neuroimaging in vision science. Special issue introduction. J Vis, 8(10), i 1.

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Books and Book Chapters

Fine, I, and **Boynton, G.M.** (2013) Matlab for the Behavioral Sciences, *Amazon Digital Services, Inc*. ASIN: B00CPT86NC

Kastner, S.A. and **Boynton, G.M.** (2013) Neuroimaging studies on human attention networks in visual and fronto-parietal cortex, in *The New Visual Neurosciences*, MIT Press

Boynton, G.M. and Saenz, M.T. (2003) Understanding the Neuronal Basis of the fMRI Signal. A book associated with a conference sponsored by the NATO Advanced Study Institute on Modulation of Neuronal Signaling: Implications for Visual Perception

Boynton, G.M. (2001) Pattern Masking. Vision Models and Applications to Image and Video Processing C. Van Den Branden Lambrecht, Kluwers Academic Publishers

Heeger, D.J., Gandhi, S.P., Huk, A.C. and **Boynton, G.M.** (2000). Neuronal Correlates of Attention in Human Visual Cortex. Visual Attention and Cortical Circuits. J. Braun and C. Koch. Cambridge, MA, MIT Press**:** 25-48.

Wandell, B.A., Baseler, H., Poirson, A.B., **Boynton, G.M.**, and Engel, S., (1999) Computational Neuroimaging: Color tuning in two human cortical areas measured using fMRI, *Color Vision: from molecular genetics to perception*, Ed. Gegenfurtner and Sharpe

Patents

Lin, J.Y., Fine, I., Boynton, G.M., and Murray, S.O. (2011) "Advertising during accelerated media playback, EP" Patent 2,430,607

Horsager, A., Boynton, G.M., Fine, I., Greenberg R., (2011) "Multi-electrode integration in a visual prosthesis" US 13014,968

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Symposia Organizer

Invited Workshop Department of Defense's Office of the Deputy Under Secretary of Defense for Laboratories and Basic Sciences: "Shifting the Paradigms in Neuroscience: What Could Be Possible by 2025?", 3/11/2012

fMRI responses predict speed and contrast discrimination thresholds (2004) , at the symposium on neuroimaging of form and motion, European Conference on Visual Perception

Orientation-specific adaptation in human visual cortex (2004) at the symposium on Computational Neuroimaging: Adaptation and Priming, Department of Psychology, University of Minnesota

Global Feature-Based Attention (2003) at the International Workshop on Visual Attention. San Miniato, Pisa.

BOLD signal: correlation with neuronal activity, (2000) at the 7th annual meeting of the Organization for Human Brain Mapping.

Symposium organizer for "Making the Final Link: Quantitative Validation of Neural and Behavioral Models using fMRI Techniques" (2000), at the 6th annual meeting of the Organization for Human Brain Mapping.

Workshop organizer for "Computational Brain Imaging: Beyond Modern Phrenology" at Neural Information Processing Systems, December 1999

Invited Talks

Learning to See Again, Keynote lecture at the Seeing Eye Planning Committee Retreat. 3/31/17

Attention Effects in Visual Cortex, UMASS Amherst Department of Psychological and Brain Sciences. 3/29/17

Pulse trains to percepts: the challenge of creating a perceptually intelligible world with sight recovery technologies, Department of Psychology, North Dakota State University, 4/1/2016

I can get that song out of your head: Decoding perceptual representations with retinotopic and tonotopic maps, Department of Experimental Psychology Colloquium Series, University College London, London UK, 6/9/15

Decoding perceptual representations with retinotopic and tonotopic maps, DPZ colloquium series, University of Gottingen, Germany 3/10/15

Decoding perceptual representations with retinotopic and tonotopic maps, Cambridge University Psychology Department Lecture Series, Cambridge UK, 11/25/14

Integrating Visual Information Over Time, Workshop on Serial Effects in Perception: Prediction, Priming and Adaptation, Pisa, Italy, 11/12/14

fMRI of Human Visual Cortex, Graduation Ceremony Scientific Lecture, University of Trento, Rovereto Italy, 11/5/14

Integrating Visual Information Over Time, British Association for Cognitive Neuroscience 2014 Meeting, York UK, 9/12/14

*I Can Get that Song Out of Your Head***,** UCSD Neurosciences Graduate Program Seminar Series, 11/5/13

Public scientific presentation for the Henry Art Gallery 10th birthday of the James Turrell Light Reign exhibit 7/19/2013

Keynote speaker for UCSD's 2012 Cognitive Neuroscience Retreat, "Spatial, Featural and Temporal Cues that Capture your Attention", 3/25,2012

Spatial, Featural and Temporal Cues that Capture Your Attention, U.T. Austin, 3/19/12

Attention and Memory for Important Events in Space and Time, Salk Institute, 8/12/10

Spatial and Feature-Based Attention in the Human Visual System, U.T. Houston, 3/10/09

Spatial and Feature-Based Attention in the Human Visual System, University of Melbourne, 12/10/08

Individual differences in acuity predict cortical maps in primary visual and somatosensory cortex, University of Melbourne, 12/14/08

Feature-Based Attention in Human Visual Cortex, Princeton University, 2/9/08

Global Feature-Based Attention in the Human Visual System, U.C. Berkeley, 12/6/06

Spatial and Feature-Based Attention in the Human Visual System, Medical College of Wisconsin, 8/11/06

Spatial and Feature-Based Attention in the Human Visual System California Institute of Technology, 3/13/06

Spatial and Feature-Based Attention in the Human Visual System Boston University, 2/24/06

Comparing psychophysical performance to fMRI responses in human visual cortex. RIKEN Institute, Tokyo Japan. 11/28/05

Effects of attention on fMRI responses in human visual cortex. University of Newcastle, UK. 6/17/05

Spatial and feature-based attention in the human visual system, Smith-Kettlewell Eye Research Institute. 5/19/05

How the brain process ignored information, University of Southern California, Department of Psychology, 10/12/04

Individual differences in acuity predict cortical maps in primary visual and somatosensory cortex, 11th annual joint symposium on neural computation, University of Southern California, 5/15/04

Adaptation in Human Visual Cortex, at the Brain Development Imaging Lab, San Diego State University 2/19/04
Individual differences in acuity predict cortical maps in primary visual and somatosensory cortex., U.C. San Diego Department of Psychology Colloquium Series, 5/27/04

Cortical magnification factors in V1 correlate with visual acuity in human subjects, Smith-Kettelwell Eye Institute, 10/23/03

Cortical magnification factors in V1 correlate with visual acuity in human subjects, Unversity of Rochester, Brain and Behavioral Sciences, Boynton colloquim series, 10/13/03

Cortical magnification factors in V1 correlate with visual acuity in human subjects, Medical College of Wisconsin, Department of Biophysics, 9/24/03

Visual acuity correlates with cortical magnification factors in human V1, University of California, Santa Barbara, Department of Psychology, 1/17/03

Characterizing the basis of the fMRI signal, Invited speaker for the Dana Foundation in association with the Society of Neuroscience11/3/02

Visual acuity correlates with cortical magnification factors in human V1, Invited speaker for the Fall Vision Meeting in association with the Optical Society of America, 10/25/02

Using fMRI to compare cortical magnification factors in human V1 to visual acuity, Conference on Visual Processing of Natural Images: Theory, Psychophysics, Physiology, & Imaging University of Minnesota, 4/5/02

Correlating fMRI responses in human visual cortex with visual perception: attention, cortical maps and visual acuity. Dartmouth College Department of Psychology, 2/29/02

Correlating fMRI responses in human visual cortex with visual perception: attention, cortical maps and visual acuity, National Institutes of Health, 2/23/02*Computational Neuroimaging: Beyond Modern Phrenology*, Invited speaker at Massachusetts General Hospital, Neuroimaging Center 9/27/01

Spatial and feature-based attention in human primary visual cortex, Invited Speaker at Oxford University Department of Physiology, 6/21/01

fMRI of the primary visual cortex: studies of contrast discrimination and spatial attention, Invited speaker at Duke University, Department of Cognitive Neurosciences, 4/20/00

fMRI of the primary visual cortex: studies of contrast discrimination and spatial attention, Cognitive Science Speaker at the University of California, Los Angeles Department of Psychology, 11/29/99

fMRI of the primary visual cortex:: studies of contrast discrimination and spatial attention, University of California, Irvine Department of Psychology 1/1/99

FMRI and visual psychophysics: bridging the gap between brain and behavior, Invited speaker at the 1999 meeting of the Optical Society of America, 9/26/99

The Role of the Primary Visual Cortex in Psychophysics and Attention, University of Rochester, Center for Visual Science Colloquium Talk 8/25/98

Neural Basis of Visual Pattern Appearance Measured with fMRI, U.C. San Diego, Department of Psychology Center for Human Information Processing Series 3/10/98

(1) Spatial Attention in V1; (2) fMRI, Psychophysics, M-Cells, and Reading Deficit Disorder, U.C. Irvine's Sensation and Perception Lunch Group 3/4/98

Comparing Psychophysics with fMRI, Southern California's Helmholtz Club 2/17/98

fMRI and psychophysics: comparing brain and behavior Imperial College of London's Physics Department Colloquium Series, 1/4/98

Neuronal Basis of Contrast Perception, Berkeley Oxyopia 12/5/98

Functional MRI and visual psychophysics: Comparing brain and behavior, San Jose State University, Department of Biology, 2/11/98

Temporal properties of human pattern vision mechanisms revealed by masking, Smith-Kettlewell Colloquia. 12/7/95

Temporal Properties of Human Pattern Vision Mechanisms Measured by Masking with Temporally Modulated Stimuli, Stanford University, Department of Psychology Colloquium on 5/15/94.

Pattern masking with Pulse and Flicker Stimuli, University of Indiana, Department of Psychology Colloquium on 9/9/93.

Reviewer for the Following Journals and Societies

- Cerebral Cortex
- Current Biology
- Investigative Ophthalmology and Vision Science
- Journal of Cerebral Blood Flow and Metabolism
- Journal of Cognitive Neuroscience
- Journal of the Optical Society of America A
- Journal of Neurophysiology
- Journal of Neuroscience
- Journal of Vision
- Nature
- Nature Neuroscience
- NeuroImage
- Neuron
- Perception and Psychophysics
- Proceedings of the National Academy of Sciences
- Proceedings of the International Colour Vision Society
- Psychological Science
- Science
- Signal Processing
- Vision Research

Reviewer of Abstracts and Study Sections for the Following:

- Abstract Review Committee, European Conference on Visual Processing 1/2013-present
- Abstract Review Committee, *Vision Sciences Society* 12/2005-present
- Member, NEI R21 Special Emphasis Panel, ZEY1 VSN(03) Summer 2013
- Ad Hoc member NIH NEI R21 Study Section, Spring 2013
- Member, NIH Central Visual Processing (CVP) Study Section (2007-2011)
- Ad Hoc member, NIH, NINDS Feb 2001, June 2001, September 2001
- Ad Hoc member, NIH VISB (now CVP), June 2002, Winter 2002, Fall 2003, Spring 2003,Fall 2004, Winter 2004, Spring 2006, Summer 2006
- Ad Hoc member, Department of Veterans Affairs, January 2004
- Member, NSF, Cognitive Neuroscience Program, December 2001, June 2002
- Reviewer of abstracts for Human Brain Mapping conference 2002, 2003
- Reviewer for Neural Information Processing Conference (NIPS), 2002, 2003, 2004
- Reviewer of abstracts for the Vision Sciences Society annual meeting, 2008,2009, 2010, 2011, 2012, 2013

Service

- Co-Director, UW Diagnostic Imaging Service Center
- Member, Promotions and Tenure committee

Teaching Experience

Introduction to Statistics and Data Analysis / Statistics Computational Lab (Psychology 524A/522A) University of Washington, Fall 2014, 2016, 2017, 2018, 2019, 2020, 2021

Statistics for the Behavioral Sciences (Psychology 315), University of Washington, Spring 2010, Fall 2010, Fall 2011, Fall 2012, Fall 2013, Spring 2014, Spring 2016, Winter 2017, Winter 2018, Winter 2019, Winter 2020.

Advanced Programming for the Behavioral Sciences (Psychology 448), University of Washington, Spring 2008, Fall 2009, Spring 2012

Functional Neuroimaging, University of Washington, Fall 2007

Physiology of the Visual System (Psych 448), University of Washington, Fall 2008

Summer Course on Computational Vision, **Cold Spring Harbor,** Course organizer and instructor, Summer 2008, 2010, 2012, 2014, 2016, 2018, 2020, 2022 (upcoming)

Sensation and Perception (Psychology 333), Department of Psychology, University of Washington, Spring 2007, Winter 2008

Introduction to Neuroimaging (Psychology 555), Department of Psychology, University of Washington, Fall 2008

Neuroscience Boot Camp, fMRI Special Project, Department of Neurosciences, University of California, San Diego, Fall 2002, 2004, and 2005

Neurobiology and Behavior "Jump Start" program, fMRI section, Fall 2009, 2010, 2011, 2012, 2013

Systems Neuroscience, Course Organizer, Department of Neuroscience, University of California, San Diego, Lecturer, Spring 2000, 2001, 2002, 2003, 2004, 2005, 2006

Perception Laboratory, Department of Psychology, University of California, Santa Barbara *(Spring, 1991)*

Multivariate Calculus, Department of Mathematics, University of California, Santa Barbara *(Summer, 1989)*

Calculus, Department of Mathematics, University of California, Santa Barbara *(Summer, 1988)*

Elementary Abstract Mathematics, Department of Mathematics, University of California, Santa Barbara *(Fall, 1988)*

Pre-Calculus, Santa Barbara City College *(Fall, 1992 and Fall 1993)*

Advanced Algebra, Santa Barbara City College *(Fall, 1991)*

Beginning Algebra, Santa Barbara City College *(Spring, 1992 and Spring, 1993)*