
BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.
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NAME Chris A. Johnson	POSITION TITLE Professor of Ophthalmology, University of Iowa		
eRA COMMONS USER NAME CAJOHNSO			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Oregon	B.A.	1970	Psychology
The Pennsylvania State University	M.Sc.	1972	Psychology
The Pennsylvania State University	Ph.D.	1974	Psychology
State University of New York	D.Sc.	2005	Honorary Degree

Please refer to the application instructions in order to complete sections A, B, and C of the Biographical Sketch.

Positions and Employment

1974 to 1976 Postdoctoral Research Fellow, Dept. of Ophthalmology, University of Florida, Gainesville, FL
1977 to 1978 Postdoctoral Research Fellow, Dept. of Ophthalmology, University of California, Davis, CA
1978 to 1983 Assistant Professor, Department of Ophthalmology, University of California, Davis, CA
1983 to 1989 Associate Professor, Department of Ophthalmology, University of California, Davis, CA
1989 to 1997 Professor, Department of Ophthalmology, University of California, Davis, CA
1989 to 1997 Director, Optics & Visual Assessment Laboratory (OVAL), University of California, Davis, CA
1997 to present Director of Diagnostic Research & Sr. Scientist, Devers Eye Institute, Discoveries in Sight
2008 Professor of Ophthalmology, University of Iowa School of Medicine

Other Experience and Professional Membership

Editorial Board Member, Journal of Glaucoma (1995-present)
Editorial Board Member, Glaucoma Today (2005-present)
Topical Editor, Optometry and Vision Science 1996-2003,2009-present)
Ad Hoc Member, VISB Study Section (1991,1992,1994,1997,1999,2000, 2003)
Scientific Advisory Board, The Glaucoma Foundation (1997-present)
Member, Ocular Hypertension Treatment Study Executive and Steering Committee (1992 to present)
Member, National Academy of Sciences / National Research Council Committee on Disability Determination (1993-1995 and 2000-2002)
Member, National Academy of Sciences / National Research Council Committee on Vision (1985-1987)
Glaucoma Advisory Committee, Prevent Blindness America (1985-present)
Vice President, International Perimetric Society (2004-present)
Co-Founder and Co-Chair, North American Perimetric Society (1995-present)

Honors and Awards:

1987 Distinguished Service Award, American Academy of Ophthalmology
1988 Honor Award, American Academy of Ophthalmology
1992 Research to Prevent Blindness Senior Scientific Investigator Award
1994 Glenn Fry Award, American Optometric Foundation
1999 Peters Memorial Lecturer, UC Berkeley Optometry Alumni Association
1999-2007 Oregon Lions Anderson-Chenoweth-Ross Vision Research Chair
2004 American Glaucoma Society Lecturer
2004 Invited Speaker, Japanese Ophthalmological Society (Tokyo)
2005 Honorary Doctor of Science, State University of New York
2005 Senior Achievement Award, American Academy of Ophthalmology
2006-2008 Levitt Visiting Professorship, University of Iowa School of Medicine
2009 ARVO Fellow (Silver)

B. Selected peer-reviewed publications (in chronological order).

Selected publications (from a total of more than 350 papers and book chapters published)

1. Turpin A, McKendrick AM, Johnson CA, Vingrys AJ: Development of efficient threshold strategies for Frequency Doubling Technology perimetry using computer simulation. *Invest Ophthalmol Vis Sci*, 2002, 43: 322-331.
2. Anderson AJ, Johnson CA: Mechanisms isolated by frequency doubling technology perimetry. *Invest Ophthalmol Vis Sci*, 2002, 43: 398-401.
3. Spry PGD, Johnson CA, Bates AB, Turpin A, Chauhan BC: Spatial and temporal processing of threshold data for detection of progressive glaucomatous visual field loss. *Arch Ophthalmol*, 2002, 120: 173-180.
4. Turpin A, McKendrick AM, Johnson CA, Vingrys AJ: Performance of efficient test procedures for Frequency Doubling Technology (FDT) perimetry in normal and glaucomatous eyes. *Invest Ophthalmol Vis Science*, 2002, 43: 709-715.
5. Anderson AJ, Johnson CA: Effect of dichoptic adaptation on frequency-doubling perimetry. *Optom Vis Sci*, 2002, 79: 88-92.
6. Spry PGD, Johnson CA: Identification of progressive glaucomatous visual field loss. *Surv Ophthalmol*, 2002, 47: 158-173.
7. McKendrick AM, Johnson CA, Anderson AJ, Fortune B. Elevated vernier acuity thresholds in glaucoma. *Invest Ophthalmol Vis Sci*, 2002, 43: 1393-1399.
8. Vesti E, Johnson CA and Chauhan BC: Comparison of different methods for detecting glaucomatous visual field progression. *Investigative Ophthalmology and Visual Science*, 2003, 44: 3873-3879.
9. Anderson AJ and Johnson CA: Frequency Doubling Technology perimetry and optical defocus. *Investigative Ophthalmology and Visual Science*, 2003, 44: 4147-4152.
10. Turpin A, McKendrick AM, Johnson CA and Vingrys AJ: Properties of perimetric threshold estimates from Full Threshold, ZEST and SITA-like strategies as determined by computer simulation. *Investigative Ophthalmology and Visual Science*, 2003, 44: 4787-4795.
11. Fortune B, Goh K, Demirel S, Novitsky K, Mansberger SL, Johnson CA and Cioffi GA: Detection of glaucomatous visual field loss using multifocal VEP. *Perimetry Update 2002/2003* (Henson and Wall, eds), The Hague: Kugler Publications, 2004, pp 251-260.
12. Ennis FA, Blachly C, Cioffi GA, Mansberger SL and Johnson CA: The effect of contour-line drawing criteria on optic disc parameters as measured with the HRT. *Perimetry Update 2002/2003* (Henson and Wall, eds), The Hague: Kugler Publications, 2004, pp 329-330.
13. Johnson CA. Software Upgrades for Automated Perimetry. *Glaucoma Today*, 2004, 2: 32-34.
14. Berson EL, Rosner B, Sandberg MA, Weigel-DiFranco, C, Moser A, Brockhurst RJ, Hayes KC, Johnson CA, Anderson EJ, Gaudio AR, Willett WC and Schafer EJ: Clinical Trial of Docosahexanoic Acid in Patients with Retinitis Pigmentosa on Vitamin A Treatment. *Archives of Ophthalmology*, 2004, 122: 1297-1305.
15. Berson EL, Rosner B, Sandberg MA, Weigel-DiFranco, C, Moser A, Brockhurst RJ, Hayes KC, Johnson CA, Anderson EJ, Gaudio AR, Willett WC and Schafer EJ: Further Evaluation of Docosahexanoic Acid in Patients with Retinitis Pigmentosa on Vitamin A Treatment: Subgroup Analysis. *Archives of Ophthalmology*, 2004, 122: 1306-1314.
16. Fortune B, Zhang X, Hood DC, Demirel S, and Johnson CA: Normative ranges and specificity of the multifocal VEP. *Documenta Ophthalmologica*, 2004, 109: 87-100.
17. Spry PGD, Johnson CA, Cioffi GA and Mansberger SL: Psychophysical investigation of ganglion cell loss in early glaucoma. *Journal of Glaucoma*, 2005, 14: 11-19.
18. Johnson CA: Early diagnosis with functional tests: Myths and reality. *Glaucoma Today*, 2005, 3: 28-31.
19. Mansberger SL, Johnson CA, Cioffi GA, Choi D, Krishnadas SR, Srinivasan M, Dip VB, Kim U, Smith SD, Wilkins JH and Gritz DC: Predictive value of Frequency Doubling Technology perimetry for detecting glaucoma in a developing country. *Journal of Glaucoma*, 2005, 14: 128-134.
20. Anderson AJ, Johnson CA, Fingeret M, Keltner JL, Spry PGD, Wall M, Werner JS: Characteristics of the normative database for the Humphrey Matrix perimeter. *Investigative Ophthalmology and Visual Science*, 2005, 46: 1540-1548.
21. Hood DC, Zhang X, Rodarte C, Yang EB, Ohri N, Fortune B, Johnson CA: Determining abnormal interocular latencies of multifocal visual evoked potentials. *Documenta Ophthalmologica*, 2004, 109: 177-187.
22. Hood DC, Ohri N, Yang EB, Rodarte C, Zhang X, Fortune B, Johnson CA: Determining abnormal latencies of multifocal visual evoked potentials: A monocular analysis. *Documenta Ophthalmologica*, 2004, 109: 189-199.

23. Mansberger SL, Romero FC, Smith NH, Johnson CA, Cioffi GA, Edmunds B, Francis P, Demirel S, Choi D and Becker TM: Causes of visual impairment and common eye problems in Northwest American Indians and Alaskan natives. *Am J public Health*, 2005, 15: 881-886.
24. Keltner JL, Johnson CA, Levine RA, Fan JJ, Cello KE, Kass MA, Gordon MO, and the Ocular Hypertension Treatment Study Group: Normal Visual Fields Following Glaucomatous Visual Field Endpoints in the Ocular Hypertension Treatment Study (OHTS). *Archives of Ophthalmology*, 2005, 123: 2101-1206.
25. Wall M and Johnson CA: Principles and Techniques of the Examination of the Visual Sensory System, Chapter 2, Walsh and Hoyt's Textbook of Neuro-Ophthalmology (Volume 1), Philadelphia: Lippincott, Williams and Wilkens, 2005, pp 83-149.
26. Gardiner SK, Johnson CA, Cioffi GA: Evaluation of the structure-function relationship in glaucoma. *Invest Ophthalmol Vis Sci*, 2005, 46: 3712-3717.
27. Gardiner SK, Demirel S, Johnson CA: Modeling the sensitivity to variability relationship in perimetry. *Vision Research*, 2006, 46: 1732-1745.
28. Fortune B, Demirel S, Zhang X, Hood DC, Johnson CA: Repeatability of the normal multifocal VEP: implications for detecting progression. *Journal of Glaucoma*, 2006, 15:131-141.
29. Dolderer J, Vonthein R, Johnson CA, Schiefer U, Hart W: Scotoma mapping by semi-automated kinetic perimetry – The effects of stimulus properties and the speed of subjects' responses. *Acta Ophthalmologica Scandinavica*, 2006, 84: 338-344.
30. Anderson AJ and Johnson CA. Comparison of the ASA, MOBS and ZEST threshold methods. *Vision Research*, 2006, 46: 2403-2411.
31. Gardiner SK, Johnson CA, Spry PGD. Normal age-related sensitivity loss for a variety of visual functions throughout the central visual field. *Optometry and Vision Science*, 2006, 83: 438-443.
32. Gardiner SK, Anderson DR, Fingeret M, McSoley JJ, Johnson CA. Evaluation of decision rules for frequency doubling technology (FDT) screening tests. *Optometry and Vision Science*, 2006, 83: 432-437.
33. Levine RA, Demirel S, Fan JJ, Keltner JL, Johnson CA, Kass MA, Gordon MO and the Ocular Hypertension Treatment Study Group. Asymmetries and visual field summaries as predictors of glaucoma in the ocular hypertension treatment study. *Investigative Ophthalmology and Visual Science*, 2006, 47: 3896-3903.
34. Keltner JL, Johnson CA, Anderson DR, Levine RA, Fan JJ, Cello KE, Quigley HA, Budenz DL, Parrish RK, Kass MA, Gordon MO and the Ocular Hypertension Treatment Study Group. The association between glaucomatous visual fields and optic nerve head features in the ocular hypertension treatment study. *Ophthalmology*, 2006, 113: 1603-1612.
35. Newkirk MR, Gardiner SK, Demirel S, Johnson CA. Assessment of False Positives with the Humphrey Field Analyzer II Perimeter with the SITA Algorithm. *Investigative Ophthalmology and Visual Science* 2006, 47: 4632-7.
36. Schiefer U, Nowomiejska K, Krapp E, Patzold J, Johnson CA. K-TRAIN – A computer-based interactive training program for practicing kinetic perimetry: evaluation of acceptance and success rate. *Graefe's Arch Clin Exp Ophthalmol*, 2006, 244: 1300-1309.
37. Quinn LM, Gardiner SK, Wheeler DT, Newkirk M, Johnson CA. Frequency Doubling Technology Perimetry in Normal Children. *American Journal of Ophthalmology*, 2006, 142: 983-9.
38. Mansberger SL, Johnson CA, Cioffi GA. The results of screening frequency doubling technology perimetry in different locations of the community. *Journal of Glaucoma*, 2006, 16: 73-80.
39. Fortune B, Demirel S, Zhang X, Hood DC, Patterson E, Jamil A, Mansberger SL, Cioffi GA, Johnson CA. Comparing Multifocal Visual Evoked Potentials (mfVEP) and Standard Automated Perimetry (SAP) in High-Risk Ocular Hypertension and Early Glaucoma. *Investigative Ophthalmology and Visual Science* 2007, 48: 1173-1180.
40. Brusini P, Johnson CA. Staging functional damage in glaucoma: Review of different classification methods. *Survey of Ophthalmology*, 2007, 52: 156-179.
41. Mansberger SL, Edmunds B, Johnson CA, Kent KJ, Cioffi GA. Community visual field screening: prevalence of follow-up and factors associated with follow-up of participants with abnormal Frequency Doubling Perimetry Technology results. *Ophthalmic Epidemiology*, 2007, 14: 1-7.
42. Rein, DB, Wirth KE, Johnson CA, Lee PP: Estimating Quality-Adjusted Life Year Losses Associated with Visual Field Deficits Using Methodological Approaches. *Ophthalmic Epidemiology*, 2007, 14: 258-264.
43. Keltner JL, Johnson CA, Cello KE, Bandermann SE, Fan JJ, Levine RA, Kass MA, Gordon MO, Ocular Hypertension Study Group: Visual field quality control in the Ocular Hypertension Treatment Study (OHTS). *Journal of Glaucoma*, 2007, 16: 665-669.

44. Huang, C, Carolan J, Redline D, Tavarati P, Woodward KR, Johnson CA, Wall M, Keltner JL. Humphrey Matrix Frequency Doubling Perimetry for neuro-ophthalmic disorders of the optic nerve and chiasm: Comparison with Humphrey SITA Standard 24-2. *Investigative Ophthalmology and Visual Science*, 2008, 49: 917-923.
45. Tavarati P, Woodward K, Keltner J, Johnson CA, Redline D, Carolan J, Huang C, Wall M. Sensitivity and specificity of the Humphrey Matrix to detect homonymous hemianopsias. *Investigative Ophthalmology and Visual Science*, 2008, 49: 924-928.
46. Nevalainen J, Krapp E, Petzold J, Mildenerger I, Besch D, Vonthein R, Keltner JL, Johnson CA, Schiefer U. Visual field defects in acute optic neuritis – distribution of different types of defect pattern, assessed with threshold-related perimetry ensuring high spatial resolution. *Graefes Arch Clin Exp Ophthalmology*, 2008, 246: 599-607.
47. Fortune B, Zhang X, Hood DC, Demirel S, Patterson E, Jamil A, Mansberger SL, Cioffi GA, Johnson CA: Effect of recording duration on the diagnostic performance of multifocal visual evoked potentials in high-risk ocular hypertension and early glaucoma. *Journal of Glaucoma*, 2008, 17: 175-182.
48. Wall M, Brito CF, Woodward KR, Doyle CK, Kardon RH, Johnson CA. Total Deviation Probability Plots for Stimulus Size V Perimetry: A Comparison With Size III Stimuli. *Arch Ophthalmol*. 2008, 126: 473-479.
49. Zeppieri M, Demirel S, Kent K, Johnson CA. Perceived spatial frequency of sinusoidal gratings. *Optometry and Vision Science*, 2008, 85: 318-329.
50. Johnson CA. Chapter 7, What visual field tests should I use in my glaucoma suspects? My patients with manifest glaucoma? *Curbside Conversations in Glaucoma* (Heuer, Gedde and Lewis, eds). Thoroughfare, New Jersey: Slack Incorporated, 2008, 31-39.
51. Gardiner SK, Swanson WH, Demirel S, McKendrick AM, Turpin A, Johnson CA. A two-stage neural spiking model of visual detection produces realistic psychometric functions. *Vision Research*, 2008, 48: 1859-1869.
52. Nevalainen J, Paetzold J, Krapp E, Vonthein R, Johnson CA, Schiefer U. The Use of Semi-automated Kinetic Perimetry (SKP) to Monitor Advanced Glaucomatous Visual Field Loss. *Graefes Arch Clin Exp Ophthalmol* 2008, 246:1331–1339.
53. Johnson CA. Occupational psychophysics to establish vision requirements. *Optometry and Vision Science*, 2008, 85: 910-923.
54. Johnson CA. Frequency Doubling Technology (FDT) perimetry for detection of glaucomatous visual field loss. Effectiveness of the FDT and Humphrey Matrix perimeters. *Glaucoma Today*, 2008, Sept/Oct, 26-28.
55. Gardiner SK, Demirel S, Johnson CA. Is there evidence for continued learning over multiple years in clinical perimetry? *Optometry and Vision Science*, 2008, 85: 1043-1048.
56. Wall M, Doyle C, Brito C, Woodward KR, Johnson C: A comparison of catch trial methods used in standard automated perimetry in glaucoma patients, *Journal of Glaucoma*, 2008, 17: 626-630.
57. Schiefer U, Pascual J, Sample PA, Edmunds B, Weleber RG, Johnson CA, Staubach F, Lagreze WA, Hoffman EM, Pfeiffer N, Krapp E, Vonthein R, Paetzold J. Comparison of the new “German Adaptive Threshold Estimation” (GATE) strategy with conventional static threshold estimating perimetry and with the SITA procedure., *Investigative Ophthalmology and Visual Science*, 2009, 50: 488-494.
58. Demirel S, Fortune B, Fan JJ, Levine RA, Torres R, Nguyen H, Mansberger SL, Gardiner SK, Cioffi GA, Johnson CA. Predicting progressive glaucomatous optic neuropathy using baseline standard automated perimetry data. *Investigative Ophthalmology and Visual Science*, 2009, 50: 674-680.
59. Johnson CA. The decision tree in glaucoma diagnosis: our knowledge of glaucoma is rapidly expanding. New knowledge about glaucoma can lead to earlier clinical intervention., *Review of Optometry*, 2009, 146.3: 100-108.
60. Johnson CA, Demirel S: Psychophysiology of Glaucoma: From form to function, Chapter 29 in *Ophthalmology Research: Mechanisms of the Glaucomas* Edited by: M. B. Shields, J. Tombran-Tink, and C. J. Barnstable © Humana Press, Totowa, NJ, 2008, pp. 527-548.
61. Johnson CA. Advanced psychophysical tests for glaucoma. Chapter 10.6 in Yanoff M and Duker J. *Ophthalmology* (3rd edition), 2009, New York: Elsevier, pp 1137-1140.

C. Research Support.

U10-EY-09307 (Keltner)

09/30/92-12/31/08

NIH/NEI

Ocular Hypertension Treatment Study Visual Field Reading Center

The major goals of this project are to process visual field data for the OHTS trial.

Role: Co-Investigator