

R. John Leigh, M.D.

GRANT NUMBER: EY06717 / R. John Leigh

## BIOGRAPHICAL SKETCH

Give the following information for all **new** key personnel.  
Copy this page for each person.

NAME	POSITION TITLE		
RICHARD JOHN LEIGH	PROFESSOR		
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing. Include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
University of Newcastle-upon-Tyne, U.K.	M.B.,B.S.	1970	Medicine and Surgery
University of Newcastle-upon-Tyne, U.K.	M.D.	1975	Medicine (Thesis)
Cornell Medical Center - New York Hospital	Resident	1975-8	Neurology
Johns Hopkins Hospital, Baltimore	Fellow	1978-9	Neurology & Ophthalmology

RESEARCH AND PROFESSIONAL EXPERIENCE: Concluding with present position, list, in chronological order, previous employment, experience, and honors. Include present membership on any Federal Government public advisory committee. List, in chronological order, the titles, all authors, and complete references to all publications during the past three years and to representative earlier publications pertinent to this application. If the list of publications in the last three years exceeds two pages, select the most pertinent publications. **DO NOT EXCEED TWO PAGES.**

### PROFESSIONAL EXPERIENCE:

1979-1983 Assistant Professor of Neurology, The Johns Hopkins Hospital  
1980-1983 Assistant Professor of Ophthalmology, The Johns Hopkins Hospital  
1983-1990 Associate Professor of Neurology, Case Western Reserve University  
1987-1990 Associate Professor of Biomedical Eng. Case Western Reserve University  
1985-1993 Associate Professor of Otolaryngology, Case Western Reserve University  
1988-1995 Associate Professor of Neuroscience, Case Western Reserve University  
1990- Professor of Neurology, Case Western Reserve University  
1990- Professor of Biomedical Eng., Case Western Reserve University  
1993- Professor of Otolaryngology, Case Western Reserve University  
1995- Professor of Neurosciences, Case Western Reserve University  
2000- Blair-Daroff Professor of Neurology, Case Western Reserve University

### HONORS AND AWARDS:

Philipson Clinical Prize and Student Research Project Prize, 1970  
Member, Royal College of Physicians, U.K., 1973  
Diplomate of American Board of Psychiatry and Neurology, 1981  
Clinical Investigator Award, National Institute on Aging, 1979-82  
Frank R. Ford Award for Outstanding Teaching of Clinical Neurology at Johns Hopkins Hospital, 1982  
Member, American Neurological Association, 1985  
Honorary Member, French Neurological Association, 1996  
Honorary Member, German Neurological Society, 1998  
Honorary Foreign Member, Association of British Neurologist, 2001  
*Brain* Visiting Scholar, Imperial College, University of London, 2003  
Elected to membership of Johns Hopkins Society of Scholars, 2004

### CONSULTANT/REVIEWER/EDITORIAL BOARD:

National Aeronautics and Space Administration (SBRI), 1984-  
Editorial Board, *Annals of Neurology*, 1990-1995  
Editorial Board, *Neurology*, 1997-2001  
Ad hoc reviewer, Visual Sciences B Study Section, NEI, NIH, 1992-93  
Member, Visual Sciences B Study Section, NEI, NIH 1993-6  
Member Veterans Affairs Merit Review Neurobiology Subcommittee, 1998-2001  
RECENT PUBLICATIONS (PubMed Lists 178):

R. John Leigh, M.D.

Das VE, DiScenna AO, Feltz A, Yaniglos SS, Leigh RJ. Tests of a linear model of visual-vestibular interaction using the technique of parameter estimation. *Biol Cybern* 1998;78:183-195.

Zivotofsky, A.Z., White, O.B., Das, V.E., Leigh, R.J. Saccades to remembered targets: The effects of saccades and illusory stimulus motion. *Vision Res* 1998;38:1287-1294.

Kori, A.A., Das, V.E., Zivotofsky, A.Z., Leigh, R.J. Memory-guided saccades: effects of cerebellar disease. *Vision Res* 1998;38:3181-3192.

Rottach, K.G., Das, V.E., Wohlgemuth, W. Zivotofsky, A.Z. Properties of horizontal saccades accompanied by blinks. *J Neurophysiology* 1998;79:2895-2902.

Averbuch-Heller L, Helmchen C, Horn AKE, Leigh RJ, Büttner-Ennever JA. Slow vertical saccades in motor neuron disease: correlation of structure and function. *Ann Neurol* 1998;44:641-648.

Averbuch-Heller L, Stahl JS, Hlavín ML, Leigh RJ. Square wave jerks induced by pallidotomy in parkinsonian patients. *Neurology* 1999;52:185-8.

Averbuch-Heller L, Paulson GW, Daroff RB, Leigh RJ. Whipple's disease mimicking progressive supranuclear palsy. *J Neurol Neurosurg Psychiatry* 1999; 66:532-5.

Ramat S, Somers JT, Das VE, Leigh RJ. Conjugate ocular oscillations during shifts of the direction and depth of visual fixation. *Invest Ophthalmol Vis Sci.* 1999 Jul;40:1681-6

Das VE, Dell'Osso LF, Leigh RJ. Enhancement of the vestibulo-ocular reflex by prior eye movements. *J Neurophysiol.* 1999;81:2884-92.

Arnold DB, Robinson DA, Leigh RJ. Nystagmus induced by pharmacological inactivation of the brainstem ocular motor integrator in monkey. *Vision Res* 1999;39:4286-95.

Ramat S, Das VE, Somers JT, Leigh RJ. Tests of two hypotheses to account for different-sized saccades during disjunctive gaze shifts. *Exp Brain Res* 1999;129:500-510.

Das VE, Yaniglos SS, Leigh RJ. The influence of light on modulation of the human vestibulo-ocular reflex. *J Vestibular Res* 2000;10:51-55.

Das VE, Leigh RJ. Visuo vestibular interactions in progressive supranuclear palsy. *Vision Res* 2000; 40:2077-2081

Bhidayasiri R, Plant G, Leigh RJ. A hypothetical scheme for vertical gaze. *Neurology* 2000;54:1985-93.

Somers JT, Das VE, Dell'Osso LF, Leigh RJ. Saccades to Sounds: Effects of tracking illusory visual stimuli. *J Neurophysiol* 2000;84:96-101.

Das VE, Oruganti P, Kramer PD, Leigh RJ. Experimental tests of a neural-network model for ocular oscillations caused by disease of central myelin. *Exp Brain Res* 2000;133:189-97.

Bhidayasiri R, Somers JT, Kim J-I, Ramat S, Nayak S, Bokil HS, Leigh RJ. Ocular oscillations induced by shifts of the direction and depth of fixation. *Ann Neurol* 2001; 49: 24-28.

Kim J-I, Somers JT, Stahl JS, Bhidayasiri R, Leigh RJ. Vertical nystagmus in normal subjects: Effects of head position, nicotine and scopolamine. *J. Vestibular Res* 2001;10: 291-300.

Han Y, Somers JT, Kim J-I, Kumar AN, Leigh RJ. 2001. Ocular responses to head rotation during mirror-viewing *J. Neurophysiol* 2001;86:2323-2329.

Kim, J.I., L. Averbuch-Heller, R. J. Leigh. 2001 Evaluation of transdermal scopolamine as treatment for acquired nystagmus. *J Neuro-ophthalmology* 2001; 21:188-192.

Bhidayasiri R, Riley, DE, Somers JT, Lerner AJ, Büttner-Ennever, JA, Leigh RJ. Pathophysiology of slow saccades in progressive supranuclear palsy. *Neurology*, 2001; 57:2070-2077.

Averbuch-Heller L, Leigh RJ, Mermelstein V, Zagalsky L, Streifler JY. Ptosis in patients with hemispheric stroke. *Neurology* 2002; 58: 620-624.

Averbuch-Heller L, Dell'Osso LF, Leigh RJ, Jacobs JB, Stahl JS. The torsional component of "horizontal" congenital nystagmus. *J Neuroophthalmol.* 2002;22:22-32.

Kumar AN, Han Y. Garbutt S, Leigh RJ. Properties of anticipatory vergence responses. *Invest Ophthalmol Vis Sci* 2002; 43: 2626-32.

Engle EC, Leigh RJ. Genes, brainstem development, and eye movements. *Neurology* 2002 59: 304-5.

Serra A, Leigh RJ. The diagnostic value of nystagmus. Spontaneous and induced ocular oscillations. *J Neurol Neurosurg Psychiatry* . 2002;73:615-8

Leigh RJ, Tomsak RL. Drug treatments for eye movement disorders. *J Neurol Neurosurg Psychiatry* 2003;74:1-4

Leigh RJ, Zee DS. *The Neurology of Eye Movements*. Edition 3. New York: Oxford University Press, 1999.

Kaminski HJ, Leigh RJ. (editors) *Neurobiology of Eye Movements -- from molecules to behavior*. *Annals of the New York Academy of Sciences* Volume 956, 2002

Garbutt S, Han Y, Kumar A, Harwood M, Rahman R, Leigh RJ. Disorders of vertical optokinetic nystagmus in patients with ocular misalignment. *Vision Res* 2003;43:347-57

Leigh RJ, Kennard C. Using saccades as a research tool in clinical neurosciences. *Brain*. 2004; 127: 1-18.