

**BIOGRAPHICAL SKETCH**

Provide the following information for the key personnel in the order listed for Form Page 2.  
Follow the sample format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Dell'Osso, Louis, Frank		POSITION TITLE Professor of Neurology and Biomedical Engineering Director, Daroff-Dell'Osso Ocular Motility Laboratory	
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
Brooklyn Polytechnic Institute	B.E.E.	1961	Electrical Engineering
Brooklyn Polytechnic Institute	Graduate E.E. Courses	1961-1963	Electrical Engineering
University of Wyoming	Ph.D.	1968	Biomedical Eng'g.

**NOTE: The Biographical Sketch may not exceed four pages. Items A and B (together) may not exceed two of the four-page limit. Follow the formats and instructions on the attached sample.**

**A. Positions and Honors.** List in chronological order previous positions, concluding with your present position. List any honors. Include present membership on any Federal Government public advisory committee.

**Industrial Research Experience:**

Republic Aviation, Inc.	June, 1961 -	Electronics Engineer
Farmingdale, L.I., N.Y.	Feb. 1963	
Westinghouse Research Lab	April-August	Research Engineer
Pittsburgh, Pennsylvania	1963	
Naval Medical Research Institute	June-August	Electronics Engineer
Bethesda Naval Hospital	1964	
Westinghouse Research Lab	August 1966	Senior Bioengineer
Pittsburgh, Pennsylvania	August 1970	Medical & Biological Research

**Academic Appointments:**

University of Wyoming	Sept. 1963-	Graduate Teaching Assistant
School of Engineering	June 1966	
University of Miami	Sept. 1970-	Assistant Professor of Biomedical
Schools of Engineering	May 1972	Engineering & Surgery
and Medicine		
University of Miami	July 1972-	Assistant Professor of Neurology
School of Medicine	May 1975	
University of Miami	June 1975-	Associate Professor of Neurology
School of Medicine	May 1979	
University of Miami	June 1979-	Professor of Neurology
School of Medicine	June 1980	
Case Western Reserve University	July 1980-	Professor of Neurology
School of Medicine	Present	
Case Western Reserve University	July 1980-	Professor of Biomedical Engineering
School of Engineering	Present	

**Hospital Staff Appointments:**

Veterans Affairs	May 1971-	Biomedical Engineer
Hospital, Miami, Florida	June 1972	(W.O.C.)
Veterans Affairs	July 1972-	Health Scientist, Co-Director, Ocular Motor
Hospital, Miami, Florida	June 1980	Neurophysiology Laboratory
Veterans Affairs	July 1980-	Biomedical Engineer Director, Ocular Motor
Medical Center, Cleveland, OH	Present	Neurophysiology Laboratory

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Principal Investigator/Program Director (Last, first, middle):

**Awards/Honors/Advisory Committees:**

Graduate Teaching Assistantship 1963-1966  
Elected Senior Member of IEEE 1976-Present  
Elected Corresponding and Scientific Member 1992-Present  
of Academia Rodinensis Pro Remediatione  
Elected Fellow of NANOS 1993-Present  
Co-Chairman, Oculomotor Physiology and Disorders Section of ARVO 1980  
Guest Editor, Invest. Ophthalmol. Vis. Sci. 1999-Present

**B. Selected peer-reviewed publications (in chronological order).** Do not include publications submitted or in preparation.

(Selected from 343 publications, including 124 peer-reviewed Journal Articles, 62 Book Chapters, 123 Abstracts and 34 Miscellaneous)

DELL'OSSO, L.F.: Evaluation of Smooth Pursuit in the Presence of Congenital Nystagmus. *Neuro-ophthalmol.* 6:383-406, 1986.

Weissman, B.M., DELL'OSSO, L.F., Abel, L.A. and Leigh, R.J.: Spasmus Nutans: A Quantitative, Prospective Study. *Arch. Ophthalmol.* 105:525-528, 1987.

DELL'OSSO, L.F., Abel, L.A. and Daroff, R.B.: Latent/Manifest Latent Nystagmus Reversal Using an Ocular Prosthesis. Implications for Vision and Ocular Dominance. *Invest. Ophthalmol. Vis. Sci.* 28:1873-1876, 1987.

Abel, L.A., Traccis, S., Troost, B.T. and DELL'OSSO, L.F.: Saccadic Trajectories Change with Amplitude, Not Time. *Neuro-ophthalmol.* 7:309-314, 1987.

Leigh, R.J., DELL'OSSO, L.F., Yaniglos, S.S. and Thurston, S.E.: Oscillopsia, Retinal Image Stabilization and Congenital Nystagmus. *Invest. Ophthalmol. Vis. Sci.* 29:279-282, 1988.

Hertle, R.W., Tabuchi, A., DELL'OSSO, L.F., Abel, L.A. and Weissman, B.M.: Saccadic Oscillations and Intrusions Preceding the Postnatal Appearance of Congenital Nystagmus. *Neuro-ophthalmol.* 8:37-42, 1988.

Noseworthy, J.H., Ebers, G.C., Leigh, R.J. and DELL'OSSO, L.F.: Torsional Nystagmus: Quantitative Features and Possible Pathogenesis. *Neurology* 38:992-994, 1988.

DELL'OSSO, L.F., Traccis, S., Abel, L.A., and Erzurum, S.I.: Contact Lenses and Congenital Nystagmus. *Clin. Vis. Sci.* 3:229-232, 1988.

Abel, L.A., DELL'OSSO, L.F. and Rusted, L.C.: Longitudinal Saccadic Changes in Huntington's Disease and Alzheimer's Disease. *Neuro-ophthalmol.* 8:307-315, 1988.

Weissman, B.M., DELL'OSSO, L.F. and DiScenna, A.: Downbeat Nystagmus in an Infant. Spontaneous Resolution During Infancy. *Neuro-ophthalmol.* 8:317-319, 1988.

DELL'OSSO, L.F.: Neural Integration in Ocular Motility. (Invited Paper) *Bull. Soc. belge Ophthalmol.* 237:19-33, 1989.

Weissman, J.D., Seidman, S.H., DELL'OSSO, L.F., Naheedy, M.H. and Leigh, R.J.: Torsional, See-Saw, "Bow-Tie" Nystagmus in Association With Brain Stem Anomalies. *Neuro-ophthalmol.* 10:315-318, 1990.

DELL'OSSO, L.F.: Eye Movements, Visual Acuity and Spatial Constancy. (Invited Paper) *Acta neurol. belg.* 91:105-113, 1991.

DELL'OSSO, L.F.: Eye Movements, Visual Acuity and Spatial Constancy. (Invited Paper) *Neuro-ophthalmol.* 11:151-156, 1991.

DELL'OSSO, L.F., Daroff, R.B. and Leigh, R.J.: Suppression of Congenital Nystagmus by Cutaneous Stimulation. *Neuro-ophthalmol.* 11:173-175, 1991.

Leigh, R.J., Tomsak, R.L., Seidman, S.H. and DELL'OSSO, L.F.: Superior Oblique Myokymia: Quantitative Characteristics of the Eye Movements in Three Patients *Arch. Ophthalmol.* 109:1710-1713, 1991.

DELL'OSSO, L.F., Van der Steen, J., Steinman, R.M. and Collewijn, H.: Foveation dynamics in congenital nystagmus I: Fixation *Doc. Ophthalmol.* 79:1-23, 1992.

DELL'OSSO, L.F., Van der Steen, J., Steinman, R.M. and Collewijn, H.: Foveation dynamics in congenital nystagmus II: Smooth pursuit *Doc. Ophthalmol.* 79:25-49, 1992.

DELL'OSSO, L.F., Van der Steen, J., Steinman, R.M. and Collewijn, H.: Foveation dynamics in congenital nystagmus III: Vestibulo-ocular reflex *Doc. Ophthalmol.* 79:51-70, 1992.

DELL'OSSO, L.F. and Leigh, R.J.: Foveation Period Stability and Oscillopsia Suppression in Congenital Nystagmus. An Hypothesis *Neuro-ophthalmol.* 12:165-183, 1992.

Leigh, R.J., Tomsak, R.L., Grant, M.P., Remler, B.F., Yaniglos, S.S., Lystad, L. and DELL'OSSO, L.F.: Effectiveness of Botulinum Toxin Administered to Abolish Acquired Nystagmus *Ann. Neurol.* 32:633-642, 1992.

Huebner, W.P., Leigh, R.J., Seidman, S.H., Thomas, C.W., Billian, C., DiScenna, A.O. and DELL'OSSO, L.F.: Experimental Tests of a Superposition Hypothesis to Explain the Relationship Between the Vestibuloocular Reflex and Smooth Pursuit During Horizontal Combined Eye-Head Tracking in Humans. *J. Neurophysiol.* 68:1775-1792, 1992.

DELL'OSSO, L.F. and Leigh, R.J.: Ocular Motor Stability of Foveation Periods. Required Conditions for Suppression of Oscillopsia *Neuro-ophthalmol.* 12:303-326, 1992.

DELL'OSSO, L.F., Weissman, B.M., Leigh, R.J., Abel, L.A. and Sheth, N.V.: Hereditary Congenital Nystagmus and Gaze-Holding Failure: The Role of the Neural Integrator. *Neurology* 43:1741-1749, 1993.

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Principal Investigator/Program Director (Last, first, middle):

- Friedman, D.I. and DELL'OSSO, L.F.: "Reappearance" of Congenital Nystagmus After Minor Head Trauma. *Neurology* 43:2414-2416, 1993.
- Leigh, R.J., Averbuch-Heller, L., Tomsak, R.L., Remler, B.F., Yaniglos, S.S. and DELL'OSSO, L.F.: Treatment of Abnormal Eye Movements that Impair Vision: Strategies Based on Current Concepts of Physiology and Pharmacology. *Ann. Neurol.* 36:129-141, 1994.
- DELL'OSSO, L.F.: Evidence Suggesting Individual Ocular Motor Control of Each Eye (Muscle). *J. Vestib. Res.* 4:335-345, 1994. (Invited Paper)
- DELL'OSSO, L.F.: Congenital and Latent/Manifest Latent Nystagmus: Diagnosis; Treatment; Foveation; Acuity; and Oscillopsia. *Jpn. J. Ophthalmol.* 38:329-336, 1994.
- DELL'OSSO, L.F.: Congenital and Latent/Manifest Latent Nystagmus: Differential Diagnosis and Treatment; Foveation; Acuity; and Oscillopsia Suppression. (In Japanese) *Ganka Rinshou Iho* 89:57-60, 1995.
- DELL'OSSO, L.F. and Williams, R.W.: Ocular Motor Abnormalities in Achiastic Mutant Belgian Sheepdogs: Unyoked Eye Movements in a Mammal. *Vision Res.* 35:109-116, 1995.
- DELL'OSSO, L.F.: The Analysis of Ocular Motor Dysfunction: Insights into Disease Processes and Normal Function. *IEEE/EMB Special Issue: Advances in Vision Research* 14:22-29, 1995. (Invited Paper)
- Seidman, S.H., Leigh, R.J., Tomsak, R.L., Grant, M.P. and DELL'OSSO, L.F.: Dynamic Properties of the Human Vestibulo-Ocular Reflex during Head Rotations in Roll. *Vision Res.* 35:679-689, 1995.
- Averbuch-Heller, L., Zivotofsky, A.Z., Remler, B.F., Das, V.E., DELL'OSSO, L.F. and Leigh, R.J.: Convergent-Divergent Pendular Nystagmus: Possible Role of the Vergence System. *Neurology* 45:509-515, 1995.
- Sheth, N.V., DELL'OSSO, L.F., Leigh, R.J., Van Doren, C.L. and Peckham, H.P.: The Effects of Afferent Stimulation on Congenital Nystagmus Foveation Periods. *Vision Res.* 35:2371-2382, 1995.
- Das, V.E., Leigh, R.J., Thomas, C.W., Averbuch-Heller, L., Zivotofsky, A.Z., DiScenna, A.O. and DELL'OSSO, L.F.: Modulation of High-Frequency Vestibuloocular Reflex During Visual Tracking in Humans. *J. Neurophysiol.* 74:624-632, 1995.
- DELL'OSSO, L.F., Leigh, R.J., Sheth, N.V. and Daroff, R.B.: Two Types of Foveation Strategy in 'Latent' Nystagmus. Fixation, Visual Acuity and Stability. *Neuro-Ophthalmol.* 15:167-186, 1995.
- Averbuch-Heller, L., Kori, A.A., Rottach, K.G., DELL'OSSO, L.F., Remler, B.F. and Leigh, R.J.: Dysfunction of pontine omnipause neurons causes impaired fixation: macrosaccadic oscillations with a unilateral pontine lesion. *Neuro-Ophthalmol.* 16:99-106, 1996.
- DELL'OSSO, L.F.: See-saw nystagmus in dogs and humans: an international, across-discipline, serendipitous collaboration. *Neurology* 46:1372-1374, 1996.
- Zivotofsky, A.Z., Rottach, K.G., Averbuch-Heller, L., Kori, A.A., Thomas, C.W., DELL'OSSO, L.F., and Leigh, R.J.: Saccades to Remembered Targets: The effects of Smooth Pursuit and Illusory Stimulus Motion. *J. Neurophysiol.* 76:3617-3632, 1996.
- DELL'OSSO, L.F., Averbuch-Heller, L. and Leigh, R.J.: Oscillopsia Suppression and Foveation-Period Variation in Congenital, Latent, and Acquired Nystagmus. *Neuro-Ophthalmol.* 18:163-183, 1997.
- DELL'OSSO, L.F., and Daroff, R.B.: Two Additional Scenarios for See-Saw Nystagmus: Achromia and Hemichiasma. *J. Neuro-Ophthalmol.* 18:112-113, 1998.
- Kori, A.A., Robin, N.H., Jacobs, J.B., Erchul, D.M., Zaidat, O., Remler, B.F., Averbuch-Heller, L., DELL'OSSO, L.F., Leigh, R.J., and Zinn, A.B.: Pendular Nystagmus in a Peroxisomal Assembly Disorder. *Arch. Neurol.* 55:554-558, 1998.
- DELL'OSSO, L.F., Williams, R.W., Jacobs, J.B. and Erchul, D.M.: The Congenital and See-Saw Nystagmus in the Prototypical Achromia of Canines: Comparison to the Human Achiastic Prototype. *Vision Res.* 38:1629-1641, 1998.
- Erchul, D.M., DELL'OSSO, L.F., and Jacobs, J.B.: Characteristics of foveating and defoveating saccades in latent nystagmus. *Invest. Ophthalmol. Vis. Sci.* 39:1571-1579, 1998.
- DELL'OSSO, L.F.: Extraocular Muscle Tenotomy, Dissection, and Suture: A Hypothetical Therapy for Congenital Nystagmus. *J. Pediatr. Ophthalmol. Strab.* 35:232-233, 1998.
- Hertle, R.W., DELL'OSSO, L.F.: Clinical and Ocular Motor Analysis of Congenital Nystagmus in Infancy. *J. Amer. Assoc. Pediatr. Ophthalmol. Strab.* 3:70-79, 1999.
- DELL'OSSO, L.F., Hertle, R.W., Williams, R.W., and Jacobs, J.B.: A New Surgery for Congenital Nystagmus: Effects of Tenotomy on an Achiastic Canine and the Role of Extraocular Proprioception. *J. Amer. Assoc. Pediatr. Ophthalmol. Strab.* 3:166-182, 1999.
- Das, V.E., DELL'OSSO, L.F., Leigh, R.J.: Enhancement of the Vestibulo-ocular Reflex by Prior Eye Movements. *J. Neurophysiol.* 81:2884-2892, 1999.
- Averbuch-Heller, L., DELL'OSSO, L.F., Jacobs, J.B. and Remler, B.F.: Latent and Congenital Nystagmus in Down Syndrome. *J. Neuro-Ophthalmol.* 19:166-172, 1999.
- Jacobs, J.B., DELL'OSSO, L.F., and Erchul, D.M.: Generation of braking saccades in congenital nystagmus. *Neuro-Ophthalmol.* 21:83-95, 1999.
- DELL'OSSO, L.F., Hogan, D.W., Jacobs, J.B., and Williams, R.W.: Eye Movements in Canine Hemichiasma: Does Human Hemichiasma Exist? *Neuro-Ophthalmol.* 22:47-58, 1999.

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Principal Investigator/Program Director (Last, first, middle):

Somers, J.T., Das, V.E., DELL'OSSO, L.F., and Leigh, R.J.: Saccades to Sounds: Effects of Tracking Illusory Visual Stimuli. *J. Neurophysiol.* 84: 96-101, 2000.

DELL'OSSO, L.F.: Nistagmo: un Vaggio Affascinante ed Informativo / Nystagmus: An Exciting Trip to Knowledge (Italian and English) Guest Editorial. *L'Oculista Italiano* XXXIV–N129-130: 38-43, 2001.

DELL'OSSO, L.F. and Jacobs, J.B.: A Normal Ocular Motor System Model That Simulates the Dual-Mode Fast Phases of Latent/Manifest Latent Nystagmus. *Biological Cybernetics* 85: 459-471, 2001.

DELL'OSSO, L.F. and Jacobs, J.B.: An Expanded Nystagmus Acuity Function: Intra- and Intersubject Prediction of Best-Corrected Visual Acuity. *Documenta Ophthalmologica* 104: 249-276, 2002.

Averbuch-Heller, L., DELL'OSSO, L.F., Leigh, R.J., Jacobs, J.B., and Stahl, J.S.: The Torsional Component of "Horizontal" Congenital Nystagmus. *J. Neuro-Ophthalmol.* 22: 22-32, 2002.

Hertle, R.W., DELL'OSSO, L.F., FitzGibbon, E.J., Caruso, R.C., Butman, J., Yang, D., and Mellow, S.D.: Clinical, Radiographic, Electrophysiologic Findings in Patients with Achromiasia or Hypochiasma. *Neuro-Ophthalmol.* 26:43-57, 2002.

Kim, J.I., DELL'OSSO, L.F., and Traboulsi, E.: Latent Nystagmus and Unilateral Acquired Pendular Nystagmus Masquerading as Spasmus Nutans. *J. Neuro-Ophthalmol.* 23:198-203, 2003.

Jacobs, J.B., DELL'OSSO, L.F., and Leigh, R.J.: Characteristics of Braking Saccades in Congenital Nystagmus. *Documenta Ophthalmologica* 107:137-154, 2003.

Hertle, R.W., DELL'OSSO, L.F., FitzGibbon, E.J., Thompson, D., Yang, D., and Mellow, S.D.: Horizontal Rectus Tenotomy In Patients with Congenital Nystagmus: Results In Ten Adults. *Ophthalmol.* 110:2097-2105, 2003.

Shallo-Hoffmann, J., DELL'OSSO, L.F., and Dun, S.: Time-varying, Slow-phase Component Interaction in Congenital Nystagmus. *Vision Res.* 44:209-220, 2004.

Jacobs, J.B. and DELL'OSSO, L.F.: Congenital Nystagmus: Hypothesis for its Genesis and Complex Waveforms within a Behavioral Ocular Motor System Model. *JOV* 4:604-625, 2004. <http://journalofvision.org/4/7/7/>

Hertle, R.W., DELL'OSSO, L.F., FitzGibbon, E.J., Thompson, D., Yang, D., and Mellow, S.D.: Horizontal Rectus Tenotomy In Patients with Congenital Nystagmus: Results In Five Children. *JAAPOS* 00:000-000, 2004. (In press)

**C. Research Support.** List selected ongoing or completed (during the last three years) research projects (federal and non-federal support). Begin with the projects that are most relevant to the research proposed in this application. Briefly indicate the overall goals of the projects and your role (e.g. PI, Co-Investigator, Consultant) in the research project. Do not list award amounts or percent effort in projects.

"Neurophysiology and Pathophysiology of Eye Movements," Principal Investigator, VA MR, FY 1999-03.

Projects: 1. Establishing the criteria for latent nystagmus fast phases to defoveate the target; 2. Research into the effects of background on latent nystagmus; 3. Studies into the function and characteristics of braking saccades; 4. Development of an improved method of predicting visual acuity of patients with nystagmus; 5. Modelling the ocular motor system with various disorders; 6. Studying the characteristics of the CN and see-saw nystagmus in achiasmic and hemichiasmic Belgian sheepdogs; 7. Evaluating the effects of tenotomy on a canine with CN; 8. Evaluating the effects of tenotomy on humans with CN.