

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

Academic Appointments:

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

Hospital Staff Appointments:

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

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 382 publications, including 135 peer-reviewed Journal Articles, 69 Book Chapters, 135 Abstracts and 29 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.

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.

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) *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.

Leigh, R.J., Averbuch-Heller, L., Tomsak, R.L., Remler, B.F., Yaniglos, S.S. and DELL'OSSO, L.F.: Treatment of 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.

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Principal Investigator/Program Director Dell'Osso, Louis, F.):

- DELL'OSSO, L.F. and Williams, R.W.: Ocular Motor Abnormalities in Achiasmatic 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: Achiasma and Hemichiasma. *J. Neuro-Ophthalmol.* 18:112-113, 1998.
- DELL'OSSO, L.F., Williams, R.W., Jacobs, J.B. and Erchul, D.M.: The Congenital and See-Saw Nystagmus in the Prototypical Achiasma of Canines: Comparison to the Human Achiasmatic 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. Pediat. 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. Pediat. 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 Achiasmatic Canine and the Role of Extraocular Proprioception. *J. Amer. Assoc. Pediat. 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.
- 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 Achiasma or Hypochiasma. *Neuro-Ophthalmol.* 26:43-57, 2002.

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Principal Investigator/Program Director Dell'Osso, Louis, F.):

- Kim, J.I., DELL'OSSO, L.F., and Traboulsi, E.: Latent Nystagmus and Uniocular 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., Yang, D., and Mellow, S.D.: Horizontal Rectus Muscle Tenotomy in Children with Infantile Nystagmus Syndrome: A Pilot Study. *JAAPOS* 8:539-548, 2004.
- Kumar, A.N., Han, Y., DELL'OSSO, L.F., Durand, D.M., and Leigh, R.J.: Directional Asymmetry during Combined Saccade-Vergence Movements. *J. Neurophysiol* 93:2797-2808, 2005.
- Tomsak, R.L., DELL'OSSO, L.F., Rucker, J.C., Leigh, R.J., Bienfang, D.C., and Jacobs, J.B.: Treatment of Acquired Pendular Nystagmus from Multiple Sclerosis with Eye Muscle Surgery Followed by Oral Memantine. *DJO* 11: 4, 1-11, 2005. <http://www.djo.harvard.edu/site.php?url=/physicians/oa/845>
- Wang, Z., DELL'OSSO, L.F., Zhang, Z., Leigh, R.J., and Jacobs, J.B.: Tenotomy Does Not Affect Saccadic Velocities: Support for the "Small-Signal" Gain Hypothesis. *Vision Res.* 46:2259-2267, 2006.
- Serra, A., DELL'OSSO, L.F., Jacobs, J.B., and Burnstine, R.A.: Combined Gaze-Angle and Vergence Variation in Infantile Nystagmus: Two Therapies that Improve the High-Visual Acuity Field and Methods to Measure It. *Invest. Ophthalmol. Vis. Sci.* 47:2451-2460, 2006.
- DELL'OSSO, L.F.: Biologically Relevant Models of Infantile Nystagmus Syndrome: The Requirement for Behavioral Ocular Motor System Models. *Sem. Ophthalmol.* 21:71-77, 2006.
- Kumar, A.N., Han, Y.H., Kirsch, R.F., DELL'OSSO, L.F., King, W.M., Leigh, R.J.: Tests of Models for Saccade-Vergence Interaction Using Novel Stimulus Conditions. *Biol. Cyber.* 95:143-157, 2006.
- Jacobs, J.B., DELL'OSSO, L.F., Hertle, R.W., Acland, G.M., and Bennett, J.: Eye Movement Recordings as an Effectiveness Indicator of Gene Therapy in RPE65-Deficient Canines: Implications for the Ocular Motor System. *Invest. Ophthalmol. Vis. Sci.* 47:2865-2875, 2006.
- Wang, Z., DELL'OSSO, L.F., Jacobs, J.B., Burnstine, R.A., and Tomsak, R.L.: Effects of Tenotomy on Patients with Infantile Nystagmus Syndrome: Foveation Improvement over a Broadened Visual Field. *JAAPOS* 00:000-000, 2006 (In press).
- DELL'OSSO, L.F., Jacobs, J.B., and Serra, A.: The Sub-Clinical See-Saw Nystagmus Embedded in Infantile Nystagmus. *Vision Res.* 00:000-000, 2006 (In press).
- Rucker, J.C., DELL'OSSO, L.F., Garbutt, S., and Jacobs, J.B.: "Staircase" Saccadic Intrusions plus Transient Yoking and Neural Integrator Failure Associated with Cerebellar Hypoplasia: a Model Simulation. *Sem. Ophthalmol.* 00:000-000, 2006 (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 2005-10.

Projects: 1. Evaluating the effects of tenotomy on humans with CN; 2. Evaluating the ocular motor effects of gene therapy on RPE65-deficient canines with CN; 3. Determining the effects of convergence at different gaze angles on CN and visual acuity; 4. Comparing the predictions of an ocular motor system model with the measured effects of target onset time and the corresponding part of the CN waveform on smooth-pursuit target acquisition time; and 5. Determining into the effects of background on latent nystagmus and visual acuity.

"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.