

CURRICULUM VITAE

Name: Eliot Lawrence Berson

Address: 330 Beacon Street, Boston, MA 02116

Date of Birth: May 9, 1937

Place of Birth: Boston, Massachusetts

Education:

1954	Phillips Academy, Andover
1958 B.S.	Yale University
1962 M.D.	Harvard Medical School

Postdoctoral Training:

1962 - 1963	Intern in Medicine, University of California and Moffit Hospital, San Francisco
1963 - 1966	Resident in Ophthalmology, Washington University School of Medicine and Barnes & McMillan Hospital, St. Louis
1966 - 1968	Clinical Associate in Ophthalmology and Surgeon, United States Public Health Service, National Institute of Neurological Diseases and Blindness, National Institute of Health, Bethesda

Licensure and Certification:

1967	Massachusetts
1968	American Board of Ophthalmology

Academic Appointments:

1968 - 1970	Instructor in Ophthalmology, Harvard Medical School
1971 - 1976	Assistant Professor of Ophthalmology, Harvard Medical School
1976 - 1982	Associate Professor of Ophthalmology, Harvard Medical School
1982 -	Wm. F. Chatlos Professor of Ophthalmology, Harvard Medical School

Hospital Appointments:

1968 - 1973	Assistant in Ophthalmology, Massachusetts Eye and Ear Infirmary
1974 - 1978	Assistant Surgeon in Ophthalmology, Massachusetts Eye and Ear Infirmary
1979 - 1984	Associate Surgeon in Ophthalmology, Massachusetts Eye and Ear Infirmary
1984 -	Surgeon in Ophthalmology, Massachusetts Eye and Ear Infirmary

Other Professional Positions:

1974 -

Director, Berman-Gund Laboratory for the Study of Retinal Degenerations, Harvard Medical School, Massachusetts Eye and Ear Infirmary

Awards and Honors:

1956	Phi Beta Kappa
1958	Summa cum laude, Yale University
1958	Sigma Xi
1974 - 1979	Research Career Development Awardee, National Eye Institute
1985	New England Ophthalmological Society Annual Award
1987	Guest of Honor, Japanese Ophthalmological Society
1988	Honor Award, American Academy of Ophthalmology
1988	Alcon Research Institute Award
1990	Franceschetti Award, International Society for Genetic Eye Diseases
1990	Research to Prevent Blindness Senior Scientific Investigator Award
1991	Taylor Smith Medal, New England Ophthalmological Society
1992	Man of Vision Award, National Society to Prevent Blindness
1992	Friedenwald Award, Association for Research in Vision and Ophthalmology
1992 - 2002	MERIT Awardee of the National Eye Institute
1993	The New York Lighthouse Pisart Vision Award
1997	Alcon Research Institute Award
1999	Teaching Award, The Lancaster Postgraduate Course in Ophthalmology
1999	Distinguished Alumni Award, Department of Ophthalmology, Washington University School of Medicine
1999	Llura Liggett Gund Award, Foundation Fighting Blindness

Major Committee Assignments:

National and Regional

1980 - 1984	Visual Sciences Study Section, NIH
1981 - 1984	Committee on Vision, National Research Council, National Academy of Sciences
1984 - 1986	Fight for Sight Grants-in-Aid Review Panel
1985 - 1989	Vision Research Review Committee Study Section, NIH
1989 -	Scientific Advisory Board, Foundation Fighting Blindness
1994 - 1999	Awards Committee, ARVO; Chairman, 1998-1999
1998 - 2003	Chairman, NEI Board of Scientific Counselors, NIH

Hospital

1986 - 1991	Member, Board of Surgeons, Mass. Eye and Ear Infirmary
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Medical School

1982 -	Committee on Promotions, Department of Ophthalmology, Harvard Medical School
1984 -	Executive Committee, Department of Ophthalmology, Harvard Medical School

Memberships, Offices, and Committee Assignments in Professional Societies:

1968 -	American Medical Association
1968 -	Association for Research in Vision and Ophthalmology
1968 -	International Society for Clinical Electrophysiology and Vision
1969 -	American Academy of Ophthalmology
1969 -	New England Ophthalmological Society
1973 -	Associate Examiner, American Board of Ophthalmology
1978 -	International Society for Genetic Eye Diseases

- 1988 - The Retina Society
- 1988 - The American Society of Human Genetics
- 1990 - The American Ophthalmological Society

Editorial Boards:

1982 - 1992	Investigative Ophthalmology and Visual Science
1984 - 1988	Ophthalmic Pediatrics and Genetics

Major Research Interests:

1. Retinitis pigmentosa and allied diseases
2. Macular degenerations
3. Electrophysiological and molecular genetic studies of hereditary retinal diseases
4. Biochemical, ultrastructural and tissue culture studies of the vertebrate retina
5. Animal models of hereditary and nutritionally induced retinal degenerations

Current Sources of Support:

1969 - 2008	National Eye Institute, Principal Investigator, Electrophysiological Studies of Retinal Degenerations
1974 - 2008	Foundation Fighting Blindness, Principal Investigator, Retinitis Pigmentosa Center Grant
2002 - 2007	National Eye Institute, Principal Investigator, Randomized Clinical Trial for Retinitis Pigmentosa

Teaching Experience:

1969 -	Faculty, Lancaster Postgraduate Course in Ophthalmology, Colby College, Waterville, Maine
1970 -	Training residents on rotation in the Electroretinography Service, Massachusetts Eye and Ear Infirmary - 250 residents to date
1972 -	Faculty advisor to postdoctoral fellows in retinal electrophysiology and hereditary retinal diseases - 18 fellows to date
1973 -	Visiting Professor in Departments of Ophthalmology: Washington University School of Medicine, St. Louis, October 1973 Yale University School of Medicine, New Haven, April 1974, October, 1977
	University of Iowa School of Medicine, Iowa City, April 1975 Mount Sinai School of Medicine, New York, February 1976, March 1984, May 1990 University of Texas Health Science Center, Dallas, December 1979 Louisiana State University, New Orleans, September 1984
1974 - 1979	Faculty and Consultant Faculty, Home Study Course, American Academy of Ophthalmology
1975 -	Supervision of medical students on elective courses
1977 - 1991	Faculty, Greater Boston Postgraduate Ophthalmology Course, Harvard Medical School
1992 -	Faculty, Course in Fundamental Issues in Vision Research: Molecular and Cell Biological Approaches, MBL, Woods Hole, Mass, sponsored by the National Eye Institute, August 1992, 1994, 1996, 1998, 2000, 2002, 2004

Principal Clinical and Hospital Service Responsibilities:

1970 - Director, Electroretinography Service, Massachusetts Eye and Ear Infirmary

Bibliography

Original Papers:

1. Berson EL, Kobayashi GS, Oglesby RB. Treatment of experimental fungal keratitis. *Arch Ophthalmol* 1965; 74:403-411.
2. Berson EL, Freeman MI, Gay AJ. Visual field defects in giant suprasellar aneurysms of internal carotid. *Arch Ophthalmol* 1966; 76:52-58.
3. Berson EL, Bigger JF, Smith ME. Malignant melanoma, retinal hole, and retinal detachment. *Arch Ophthalmol* 1967; 77:223-225.
4. Berson EL, Kobayashi GS, Becker B, Rosenbaum, L. Topical corticosteroids and fungal keratitis. *Invest Ophthalmol Vis Sci* 1967; 6:512-517.
5. Berson EL, Gouras P, Gunkel RD. Rod responses in retinitis pigmentosa, dominantly inherited. *Arch Ophthalmol* 1968; 80:58-67.
6. Berson EL, Gouras P, Gunkel RD. Progressive cone-rod degeneration. *Arch Ophthalmol* 1968; 80:68-76.
7. Berson EL, Gouras P, Gunkel RD. Progressive cone degeneration, dominantly inherited. *Arch Ophthalmol* 1968; 80:77-83.
8. Barth WF, Berson EL. Relapsing polychondritis, rheumatoid arthritis and blindness. *Amer J Ophthalmol* 1968; 66:890-895.
9. Berson EL, Gouras P, Hoff M. Temporal aspects of the electroretinogram. *Arch Ophthalmol* 1969; 81:207-214.
10. Berson EL, Gouras P, Gunkel RD, Myrianthopoulos NC. Rod and cone responses in sex-linked retinitis pigmentosa. *Arch Ophthalmol* 1969; 81:215-225.
11. Berson EL, Gouras P, Gunkel RD, Myrianthopoulos, NC. Dominant retinitis pigmentosa with reduced penetrance. *Arch Ophthalmol* 1969; 81:226-234.
12. Geltzer AL, Berson EL. Fluorescein angiography of hereditary retinal degenerations. *Arch Ophthalmol* 1969; 81:776-782.
13. Goldstein EB, Berson EL. Cone dominance of the human early receptor potential. *Nature* 1969; 222:1272-1273.
14. Berson EL, Goldstein EB. Early receptor potential in dominantly inherited retinitis pigmentosa. *Arch Ophthalmol* 1970; 83:412-420.
15. Goldstein EB, Berson EL. Rod and cone contributions to the human early receptor potential. *Vision Res* 1970; 10:207-218.

16. Berson EL, Goldstein EB. Recovery of the human early receptor potential during dark adaptation in hereditary retinal disease. *Vision Res* 1970; 10:219-226.
17. Berson EL, Goldstein EB. The early receptor potential in sex-linked retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1970; 9:58-63.

18. Berson EL, Kanters L. Cone and rod responses in a family with recessively inherited retinitis pigmentosa. *Arch Ophthalmol* 1970; 84:288-297.
19. Berson EL. Acute toxic effects of chloroquine on the cat retina. *Invest Ophthalmol Vis Sci* 1970; 9:618-628.
20. Smith RJ, Berson EL. Acute toxic effects of chloroquine on the cat retina: ultrastructural changes. *Invest Ophthalmol Vis Sci* 1971; 10:237-246.
21. Berson EL. Light deprivation for early retinitis pigmentosa, a hypothesis. *Arch Ophthalmol* 1971; 85:521-529.
22. Berson EL, Howard MJ. Temporal aspects of the electroretinogram in sector retinitis pigmentosa. *Arch Ophthalmol* 1971; 86:653-665.
23. Berson EL, Goldstein EB. Cone pigment regeneration, retinitis pigmentosa and light deprivation. *Vision Res* 1972; 12:749-752.
24. Berson EL. Experimental and therapeutic aspects of photic damage to the retina. *Invest Ophthalmol Vis Sci* 1973; 12:35-44.
25. Berson EL, Mehaffey L, Rabin AR. A night vision device as an aid for patients with retinitis pigmentosa. *Arch Ophthalmol* 1973; 90:112-116.
26. Rabin AR, Hayes KC, Berson EL. Cone and rod responses in nutritionally induced retinal degeneration in the cat. *Invest Ophthalmol Vis Sci* 1973; 12:694-704.
27. Berson EL, Rabin AR, Mehaffey L. Advances in night vision technology: A pocketoscope for patients with retinitis pigmentosa. *Arch Ophthalmol* 1973; 90:427-431.
28. Berson EL. Retinitis pigmentosa, the electroretinogram, and Mendel's laws. *Trans Pa Acad Ophthalmol Otolaryngol* 1973; 26:109-113.
29. Mehaffey L, Berson EL. Cone mechanisms in the electroretinogram of the cynomolgus monkey. *Invest Ophthalmol Vis Sci* 1974; 13:266-273.
30. Berson EL, Mehaffey L, Rabin AR. A night vision pocketoscope for patients with retinitis pigmentosa: design considerations. *Arch Ophthalmol* 1974; 91:495-500.
31. Berson EL. Electroretinographic testing as an aid in determining visual prognosis in families with hereditary retinal degenerations. In: Pruett, RC, and Regan, CDJ, eds.: *Retina Congress*. Appleton-Century-Crofts, New York, 1974, pp. 41-54.
32. Hill DA, Arbel KF, Berson EL. Cone electroretinograms in congenital nyctalopia with myopia. *Amer J Ophthalmol* 1974; 78:127-136.
33. Rabin AR, Berson EL. A full-field system for clinical electroretinography. *Arch Ophthalmol* 1974; 92:59-63.
34. Hayes KC, Rabin AT, Berson EL. An ultrastructural study of nutritionally induced

and reversed retinal degeneration in cats. *Amer J Pathol* 1975; 78:505-516.

35. Schmidt SY, Berson EL, Hayes KC. Retinal degeneration in cats fed casein:
I. Taurine deficiency. *Invest Ophthalmol Vis Sci* 1976; 15:47-52.

36. Berson EL, Hayes KC, Rabin AR, Schmidt SY, Watson G. Retinal degeneration in cats fed casein: II. Supplementation with methionine, cysteine or taurine. *Invest Ophthalmol Vis Sci* 1976; 15:52-58.
37. Berson EL. Night blindness: Some aspects of management. In: Faye, E, ed.: *Clinical Low Vision*, Boston, Little Brown and Company, 1976, pp. 301-306.
38. Berson EL, Schmidt SY, Rabin AR. Plasma amino-acids in hereditary retinal disease: ornithine, lysine, and taurine. *Br J Ophthalmol* 1976; 60:142-147.
39. Rabin AR, Mehaffey L, Berson EL. Blue cone function in the retina of the cat. *Vision Res* 1976; 16:799-801.
40. Schmidt SY, Berson EL, Hayes KC. Retinal degeneration in the taurine deficient cat. *Trans Am Acad Ophthalmol Otolaryngol* 1976; 81:687-693.
41. Berson EL. Retinitis pigmentosa and allied diseases: electrophysiologic findings. *Trans Amer Acad Ophthalmol Otolaryngol* 1976; 81:659-666.
42. Sandberg MA, Berson EL. Blue and green cone mechanisms in retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1977; 16:149-157.
43. Schmidt SY, Berson EL, Watson, G, Huang C. Retinal degeneration in cats fed casein: III. Taurine deficiency and ERG amplitudes. *Invest Ophthalmol Vis Sci* 1977; 16:673-678.
44. Berson EL. Hereditary retinal diseases: classification with the full-field electroretinograms. In: Lawwill T, editor. *Documenta Ophthalmologica Proceedings Series, No. 13 - XIV ISCERG Symposium, May 10-14, 1976, Louisville, Kentucky, U.S.A.* Dr W Junk, The Hague, The Netherlands, 1977, p. 149-171.
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46. Sandberg MA, Berson EL, Ariel M. Visually evoked response testing with a stimulator-ophthalmoscope: macular scars, hereditary macular degenerations, and retinitis pigmentosa. *Arch Ophthalmol* 1977; 95:1805-1808.
47. Sandberg MA, Rosen JB, Berson EL. Cone and rod function in vitamin A deficiency with chronic alcoholism and in retinitis pigmentosa. *Amer J Ophthalmol* 1977; 84:658-665.
48. Shih VE, Berson EL, Mandell R, Schmidt SY. Ornithine ketoacid transaminase deficiency in gyrate atrophy of the choroid and retina. *Amer J Hum Genet* 1978; 30:174-179.
49. Schmidt SY, Berson EL. Taurine uptake in isolated retinas of normal rats and rats with hereditary retinal degeneration. *Exp Eye Res* 1978; 27:191-198.
50. Berson EL, Schmidt SY, Shih VE. Ocular and biochemical abnormalities in gyrate

atrophy of the choroid and retina. *Ophthalmology* (formerly *Trans Amer Acad Ophthalmol Otolaryngol*) 1978; 85:1018-1027.

51. Sandberg MA, Efron MH, Berson EL. Focal cone electroretinograms in dominant retinitis pigmentosa with reduced penetrance. *Invest Ophthalmol Vis Sci* 1978; 17:1096-1101.
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53. Berson EL, Rosen JB, Simonoff EA. Electroretinographic testing as an aid in detection of carriers of X-chromosome-linked retinitis pigmentosa. *Amer J Ophthalmol* 1979; 87:460-468.
54. Berson EL, Simonoff EA. Dominant retinitis pigmentosa with reduced penetrance: further studies of the electroretinogram. *Arch Ophthalmol* 1979; 97:1286-1291.
55. Sandberg MA, Jacobson SG, Berson EL. Foveal cone electroretinograms in retinitis pigmentosa and juvenile macular degeneration. *Amer J Ophthalmol* 1979; 88:702-707.
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61. Berson EL, Shih VE, Sullivan PL. Ocular findings in patients with gyrate atrophy on pyridoxine and low-protein, low-arginine diets. *Ophthalmology* 1981; 88:311-315.
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63. Berson EL. Retinitis pigmentosa and allied diseases: applications of electroretinographic testing. The Hague, The Netherlands, Dr W Junk, *Int Ophthalmol* 1981; 4,1-2:7-22.
64. Sandberg MA, Berson EL, Efron MH. Rod-cone interaction in the distal human retina. *Science* 1981; 212:829-831.

65. Shih VE, Berson EL, Gargiulo M. Reduction of hyperornithinemia with a low protein, low arginine diet and pyridoxine in patients with a deficiency of ornithine-ketoacid transaminase (OKT) activity and gyrate atrophy of the choroid and retina. *Clin Chim Acta* 1981; 113:243-251.
66. Sandberg MA, Sullivan PL, Berson EL. Temporal aspects of the dark-adapted cone a-wave in retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1981; 21:765-769.
67. Birch DG, Sandberg MA, Berson EL. The Stiles-Crawford effect in retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1982; 22:157-164.
68. Szamier RB, Berson EL. Histopathologic study of an unusual form of retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1982; 22:559-570.
69. Berson EL, Hanson AH, Rosner BE, Shih VE. A two-year trial of low protein, low arginine diets or vitamin B₆ for patients with gyrate atrophy. In: Cotlier E, Maumenee I, Berman E editors. *Birth Defects: Original Article Series*. AR Liss, Inc., New York, 1982, pp. 209-218.
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72. Sandberg MA, Hanson AH, Berson EL. Foveal and parafoveal cone electroretinograms in juvenile macular degeneration. *Ophthalmol Paed Gen* 1983; 3:83-87.
73. Sandberg MA, Berson EL. Visual acuity and cone spatial density in retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1983; 24:1511-1513.
74. Jacobson SG, Sandberg MA, Berson EL. Static fundus perimetry in amblyopia: comparison with juvenile macular degeneration. In: Greve EL, Heijl A, editors. *Fifth International Visual Field Symposium*. Dr W Junk, The Hague, The Netherlands, 1983; 35:427.
75. Birch DG, Berson EL, Sandberg MA. Diurnal rhythm in the human rod ERG. *Invest Ophthalmol Vis Sci* 1984; 25:236-238.
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79. Bridges CDB, O'Gorman S, Fong S-L, Alvarez RA, Berson EL. Vitamin A and interstitial retinol-binding protein in an eye with recessively inherited retinitis

- pigmentosa. *Invest Ophthalmol Vis Sci* 1985; 26:684-691.
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 84. Sandberg MA, Pawlyk BS, Berson EL. Full-field electroretinograms in miniature poodles with progressive rod-cone degeneration. *Invest Ophthalmol Vis Sci* 1986; 27:1179-1184.
 85. Berson EL, Sandberg MA, Maguire A, Bromley W, Roderick TH. Electroretinograms in carriers of blue cone monochromatism. *Amer J Ophthalmol* 1986; 102:254-261.
 86. Sandberg MA, Pawlyk BS, Berson EL. Electroretinogram (ERG) sensitivity and phagosome frequency in the normal pigmented rat. *Exp Eye Res* 1986; 43:781-789.
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 88. Sandberg MA, Pawlyk BS, Crane WG, Schmidt SY, Berson EL. Effects of IBMX on the ERG of the isolated perfused cat eye. *Vision Res* 1987; 27:1421-1430.
 89. Berson EL. Electroretinographic findings in retinitis pigmentosa. *Japanese J Ophthalmol* 1987; 31:327-348.
 90. Berson EL. Retinitis pigmentosa and allied diseases: some aspects of diagnosis, pathogenesis, and management. In: *Night Vision: Current Research and Future Directions*, Committee on Vision, National Research Council. National Academy Press, Washington, DC, 1987, pp. 41-56.
 91. Sandberg MA, Baruzzi CM, Hanson III AH, Berson EL. Rod ERG diurnal rhythm in some patients with dominant retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1988; 29:494-498.
 92. Andréasson SOL, Sandberg MA, Berson EL. Narrow-band filtering for monitoring low-amplitude cone electroretinograms in retinitis pigmentosa. *Amer J Ophthalmol* 1988; 105:500-503.

93. Ramesh V, McClatchey AI, Ramesh N, Benoit LA, Berson EL, Shih VE, Gusella JF. Molecular basis of ornithine aminotransferase deficiency in B₆-responsive and -nonresponsive forms of gyrate atrophy. *Proc Natl Acad Sci USA* 1988; 85:3777-3780.
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95. O'Gorman S, Flaherty WA, Fishman GA, Berson EL. Histopathologic findings in Best's vitelliform macular dystrophy. *Arch Ophthalmol* 1988; 106:1261-1268.
96. Berson EL, Lessell S. Paraneoplastic night blindness with malignant melanoma. *Amer J Ophthalmol* 1988; 106:307-311.
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101. Manning FJ, Bruce AM, Berson EL. Electroretinograms in microcephaly with chorio-retinal degeneration. *Amer J Ophthalmol* 1990; 109:457-463.
102. Schmidt SY, Berson EL. Opsin phosphorylation in retinas from autopsy eyes with retinitis pigmentosa. *Invest Ophthalmol Vis Sci* 1990; 31:1023-1028.
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