CURRICULUM VITAE

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EDUCATION:

1968	B.A., Harvard College, Cambridge, Massachusetts.
1972	M.D., Harvard Medical School, Boston, Massachusetts.

BRIEF CHRONOLOGY OF EMPLOYMENT:

1972-1973	Intern, Harvard Medical Service, Boston City Hospital, Boston, MA.
1973-1975	Research Fellow, National Institute of Mental Health, Laboratory of Neuropharmacology, St. Elizabeths Hospital, Washington, D.C.
1975-1978	Resident Physician and Research Fellow, Dept. of Psychiatry, Univ. of Chicago Hospital and Clinics, Chicago, Illinois.
1978-1981	Assistant Professor of Psychiatry and Pharmacology, Univ. of Colorado Health Sciences Center, Denver, Colorado
1978-present	Staff Psychiatrist, Veterans Administration Hospital, Denver, Colorado.
1981-1985	Director and Ward Chief, Biological Consultation Service and Psychiatric Assessment Unit, Boulder Psychiatric Institute, Boulder, Colorado. Established a new clinical service at a proprietary hospital, increasing patient census from 0 to 24 patients. Established clinical and fiscal value of using research methods in a tertiary care setting.
1981-1986	Associate Professor of Psychiatry and Pharmacology, Univ. of Colorado Health Sciences Center, Denver, CO.
1986-present	Professor, Department of Psychiatry and Pharmacology, Univ. of Colorado Health Sciences Center, Denver, CO.
1986-2000	Vice Chairman and Director of Research, Department of Psychiatry, Univ. of Colorado Health Sciences Center, Denver, CO. Responsible for establishing two clinical-basic collaborative research centers.
1987-present	Senior Fellow, Eleanor Roosevelt Institute for Cancer Research, Denver, CO
1990-1991	Visiting Scientist, Department of Histology and Neurobiology, Karolinska Institute, Stockholm, Sweden.

1990-2000 Director, VA Schizophrenia Center, Denver VAMC

2005-2010 Scientific Director, VA Mental Illness Research, Education, and Clinical Center (MIRECC)

2000-2017 Chairman, Department of Psychiatry, and Superintendent, Colorado Psychiatric Hospital, University of Colorado Health Sciences Center, Denver, CO. Colorado Psychiatric Hospital became a division of University of Colorado Hospital July 1, 2001; Dr. Freedman was then Chief of Service.

MILITARY SERVICE:

1973-1975 Surgeon, United States Public Health Service.

CERTIFICATION:

- Diplomate, National Board of Medical Examiners; 1973
- Licensed Physician, State of Illinois; 1976
- Licensed Physician, State of Colorado; 1978
- Diplomate, American Board of Psychiatry and Neurology; 1980

EDITORIAL BOARDS:

- Editor-in-Chief, American Journal of Psychiatry, 2006-2018
- New England Journal of Medicine, 2001-2014
- Schizophrenia Research, 1992-2002
- Neuropsychopharmacology, 1995-2002
- Biological Psychiatry, 1997-2002
- Experimental Neurology, 2000-2005
- Shanghai Archives of Psychiatry, 2010-present
- Field Editor, Journal of Pharmacology and Experimental Therapeutics, 1994-1995

ADVISORY/PEER REVIEW COMMITTEES:

- VA Merit Review Board, Neurobiology, 1986-1989.
- VA Merit Review Board, Mental Health and Behavioral Sciences, 1989-1991.
- NIDA Initial Review Group, 1996-1999.
- Chair, VA Medical Research Advisory Group for Mental Health, 1997-2000
- National Institute of Drug Abuse, Board of Scientific Councilors, 1999-2004
- National Institute of Mental Health, National Advisory Council, VA Representative,1999-2005
- Institute of Medicine, 2004-present
- Chair, VA Research Eligibility Committee, 2009-2010
- National Association for Research in Schizophrenia and Affective Disorders, Scientific Advisory Committee, 2001-present
- NIMH Intervention and Treatment Initial Review Group, Chair, 2009-present
- American Psychiatric Association, Co-Chair Scientific Review Committee for DSM5, 2011-2013.
- National Academy of Medicine Committee to review clinical trials publication 2013

PROFESSIONAL SOCIETY MEMBERSHIPS:

- National Academy of Medicine, National Academies of Science of the United States
- Society of Biological Psychiatry
- American Psychiatric Association – Distinguished Fellow
- American College of Neuropharmacology– Distinguished Fellow
- American College of Psychiatrists – Distinguished Fellow
- Society for Neuroscience
- American Society of Human Genetics
- Dana Alliance for Neuroscience

COMMUNITY SERVICE

- President, Mothers and Children's Project, 1984-1999
- Service Award, National Alliance for the Mentally Ill, 1984
- Scientific Director, Institute for Children's Mental Health, 1999-present
- Board Member, Mental Health Association of Colorado, 1998-2003
- Scientific Advisory Committee, Brain and Behavior Research Foundation, 2001-present

AWARDS:

- Phi Beta Kappa Society, 1968
- A.E. Bennett Research Award of the Society of Biological Psychiatry, 1976
- Falk Fellow, American Psychiatry Association, 1976
- Honorary Founding Member, Colorado NAMI, 1981-2001
- Colorado Alliance for the Mentally Ill Recognition Award, 1984
- Edward Sacher Award of Columbia University, 1997
- Eli Lilly Award for Social Service, 1998
- William K. Warren Award for Schizophrenia Research of the International Congress of Schizophrenia Research, 1999
- Dean Award for Research of the American College of Psychiatrists, 2000
- NARSAD Distinguished Investigator Award, 1999
- National Academies of Science Institute of Medicine, 2004
- Distinguished Psychiatrist Lecturer, American Psychiatric Association, 2005
- Middleton Research Award, Department of Veterans Affairs, 2008
- Research Award, American Psychiatric Association, 2008
- First Ming T. Tsuang MD, PhD Professor, National Defense University, Taipei, Taiwan 2009
- Socio de Honor, Sociedad Española De Psiquiatría, 2010
- Distinguished Service Award, American Psychiatric Association, 2011
- First Javier I. Escobar MD Professor, University of Antioquia, Medellin, Colombia
- Adolf Meyer Lecture Award, American Psychiatric Association, 2014
- Lieber Award in Schizophrenia Research, Brain and Behavior Research Foundation, 2015

TEACHING AWARDS:

- Psychiatric Residents' Teaching Award, 1985, 1993, 1995

- Medical Students' Teaching Award, 1993, 1995, 1996 (Pharmacology), 1997, 2000 (Pharmacology and Psychiatry)
- University of Colorado Graduate Student Mentoring Award, 2002
- Mentoring Award, American Association of Chairs of Departments of Psychiatry, 2005
- Academic Award, American Academy of Child and Adolescent Psychiatry, 2007

RESEARCH INTERESTS:

Molecular and neurobiology and its translation to clinical Psychiatry, with an emphasis on prenatal prevention.

GRANT SUPPORT (2000-present):

- NIMH R01 MH59565 "Molecular Genetics of Schizophrenia." Principal Investigator, Colorado Site. Member of the Executive Committee for 9 Center Co-operative Project. 1999-2007.

- NIMH P50 MH068582 "Molecular Neurobiology of Schizophrenia." Principal Investigator. Silvio Conte Center for Translational Neuroscience of Mental Disorders. 2004-2009.

- NIMH R01 MH38321 (MERIT AWARD). "Electrophysiology of Sensory Gating in Schizophrenia." Principal Investigator, 1984-2006

- NARSAD Senior Investigator Award, Nicotinic Agonist Therapy, 2004-2006

- Veterans Administration Medical Research Service Merit Review Award, "Neuronal Physiology of Schizophrenia", Principal Investigator. 1988-2008

- Veterans Administration Medical Research Service National Schizophrenia Research Center, "Molecular Biology of Neuronal Abnormalities in Schizophrenia". Medical Director. 1989-2011

- Veterans Administration Medical Research Service Merit Review Award, "Nicotinic Receptors in Schizophrenia", Principal Investigator. 2009-2015

- NIMH R01 MH61412. "Nicotinic Agonists in Schizophrenia." Principal Investigator. 2001-2012

- NIMH 1 P50 MH086383 "Basic to Clinical Molecular Neurobiology of Nicotinic Receptors in Schizophrenia" Principal Investigator, Silvio Conte Center for Translational Neuroscience of Mental Disorders. 2009-2014

- NIMH U01MH094247 Human Trial of Allosteric Modulator Alpha7 Nicotinic Receptors in Schizophrenia, Principal Investigator, 2011-2015.

- NIDA RO1DA058641 Co-Investigator, Prenatal Choline Supplements for Cannabis-using Women, 2024-2029

BOOK:

The Madness Within Us: Schizophrenia as a Neuronal Process, Oxford University Press, 2012.

PUBLICATIONS:

1. Corey, E.J., Seebach, D. and Freedman, R. Alpha-silyl ketones via 1,3-dithianes. J. Amer. Chem. Soc., 316: 788-792, 1968.
2. Hobson, J.A., McCarley, R.W., Pivik, R.T. and Freedman, R. Selective firing by cat pontine brain stem neurons in desynchronized sleep. J. Neurophysiology, 37: 497- 511, 1974.
3. Hobson, J.A., McCarley, R.W., Freedman, R. and Pivik, R.T. Time course of discharge rate changes by cat pontine brain stem neurons during sleep cycle. J. Neurophysiology, 37: 1297-1309, 1974.
4. Foote, S.L., Freedman, R. and Oliver, A.P. Effects of putative neurotransmitters on neuronal activity in monkey auditory cortex. Brain Research, 86: 229-242, 1975.
5. Freedman, R. and Hoffer, B.J. Phenothiazine antagonism of the noradrenergic inhibition of cerebellar Purkinje neurons. J. Neurobiology, 6: 277-288, 1975.
6. Freedman, R., Hoffer, B.J. and Woodward, D.J. A quantitative microiontophoretic analysis of the responses of central neurons to noradrenaline: Interactions with cobalt, manganese, verapamil, and dichloroisoprenaline. British J. of Pharmacology, 54: 529-538, 1975.
7. Freedman, R., Foote, S.L. and Bloom, F.E. Histochemical characterization of a neocortical projection of the nucleus locus coeruleus in the squirrel monkey. J. of Comparative Neurology, 164: 209-232, 1975.
8. Skolnick, P., Daly, J.W., Freedman, R. and Hoffer, B.J. Interrelationship between catecholamine-stimulated formation of cyclic AMP in cerebellar slices and inhibitory effects on cerebellar Purkinje cells: Antagonism by neuroleptic compounds. J. of Pharmacology and Experimental Therapeutics, 197: 280-292, 1976.
9. Hoffer, B.J., Freedman, R., Woodward, D.J., Daly, J.W. and Skolnick, P. Adrenergic receptors in cerebellum: Pharmacological heterogeneity confirmed by destruction of interneurons. Exper. Neurol., 51: 653-677, 1976.
10. Nathanson, J.A., Freedman, R. and Hoffer, B.J. Lanthanum: Calcium-independent blockade of noradrenergic depression of Purkinje cell discharge. Nature, 261: 330-332, 1976.
11. Olson, L., Freedman, R., Seiger, A. and Hoffer, B.J. Electrophysiology and cytology of hippocampal formation transplants in the anterior chamber of the eye. I. Intrinsic organization. Brain Research, 119: 87-106, 1977.
12. Hoffer, B.J., Seiger, A., Freedman, R. and Olson, L. Electrophysiology and cytology of hippocampal formation transplants in the anterior chamber of the eye. II. Cholinergic mechanisms. Brain Research, 119: 107-132, 1977.
13. Freedman, R., Hoffer, B.J., Puro, D. and Woodward, D.J. Effects of noradrenaline on the responses of the cerebellar Purkinje cell to afferent synaptic activity. British J. of Pharmacology, 57: 603-605, 1976.
14. Freedman, R. Interactions of antipsychotic drugs with Cerebellar neuronal circuitry: Implications for the psychobiology of psychosis. Biological Psychiatry, 12: 181-196, 1977. A.E. Bennett Research Award.
15. Freedman, R. and Schwab, P.J. Paranoid symptoms in patients admitted to a general hospital psychiatric unit. Archives of General Psychiatry, 35:387-391, 1978.
16. Hoffer, B.J., Freedman, R., Seiger, A. and Olson, L. Seizures and related epileptiform activity in hippocampal formation transplants in the anterior chamber of the eye. Experimental Neurology, 54: 233-250, 1977.
17. Freedman, R., Hoffer, B.J., Woodward, D.J. and Puro, D. Interaction of norepinephrine with cerebellar activity evoked by mossy and climbing fibers. Experimental Neurology, 55: 269-288, 1977.

18. Taylor, D., Seiger, A., Freedman, R., Olson, L. and Hoffer, B.J. Electrophysiological analysis of reinnervation of transplants in the anterior chamber of the eye by the autonomic ground plexus of the iris. Proc. of the National Academy of Science, 75: 1009-1112, 1978.
19. Offenkrantz, W., Tobin, A., and Freedman, R. A psychodynamic hypothesis about heroin addiction, prostitution, and suicide: An acting-out of conflicts about parenting. International J. of Psychoanalytic Psychotherapy, 7:602-608, 1978.
20. Freedman, R. Symposium on isolated neuronal systems: Intraocular transplantation. Eighth Annual Winter Conference on Brain Research. Brain Information Service Report No. 41, 13-17, 1975.
21. Freedman, R. Symposium on information processing in the brain: Effects of norepinephrine on cerebellar neuronal circuitry. Ninth Annual Winter Conference on Brain Research. Brain Information Service, 79-89,1976.
22. Hoffer, B.J., Freedman, R., Woodward, D., Puro, D. and Moises, H. A functional role for the adrenergic input to the cerebellar cortex: Interaction of norepinephrine with mossy and climbing fiber excitation and GABA-mediated inhibition. Interactions Among Putative Neurotransmitters in the Brain (S. Garattini, et al., ed.), 231-243, 1978.
23. Offenkrantz, W., Tobin, A. and Freedman, R. Comments on an aspect of "The Survey of Psychoanalytic Practice": The third party parameter in psychoanalysis. Report of the Panel, S.E. Pulver, reporter. J. Amer. Psychoanalytic Assoc., 26: 626-630, 1978.
24. Schwab, P. and Freedman, R. Self-diagnosis of paranoid schizophrenia. J. Amer. Medical Assoc., 239: 1283, 1978.
25. Freedman, R. and Hoffer, B.J. Interactions between antipsychotic drugs and central noradrenergic pathways. In Usdin, E. (ed.), Catecholamines: Basic and Clinical Frontiers, 1979, pp. 628-630.
26. Olson, L., Seiger, A., Alund, M., Freedman, R., Taylor, D. and Hoffer, B. Grafts of locus coeruleus and substantia nigra in oculo: Regulation of CA fiber growth into peripheral and central target tissues and establishment of functional connections between double brain grafts. Ibid.
27. Hoffer, B., Taylor, D., Freedman, R., Seiger, A. and Olson, L. Functional autonomic inputs to transplants in the anterior chamber of the eye. Ibid.
28. Woodward, D.J., Moises, H.C., Waterhouse, B.D., Hoffer, B.J. and Freedman, R. Modulatory actions of norepinephrine in the central nervous system. Fed. Proc., 38: 2109-2116, 1979.
29. Freedman, R., Silverman, M. and Schwab, P. Patients' awareness of extrapyramidal reactions to neuroleptic drugs: Possible evidence for the role of catecholamines in perception. J. Psychiatry Research, 1: 31-38, 1979.
30. Freedman, R. and Marwaha, J. Effects of acute and chronic amphetamine treatment on Purkinje neuron discharge in rat cerebellum. J. Pharm. Exp. Ther., 212: 390-396, 1980.
31. Freedman, R., Taylor, D., Seiger, A., Olson, L. and Hoffer, B.J. Seizures and related epileptiform activity in hippocampus transplanted to the anterior chamber of the eye. II. Modulation by cholinergic and adrenergic input. Annals Neurol., 6 (4): 281-295, 1979.
32. Woodward, D.J., Moises, H.C., Hoffer, B.J. and Freedman, R. Norepinephrine modulation of Purkinje cell responses evoked by afferent stimulation and by microiontophoresis of amino acid neurotransmitters. In: Ryall, R. and Kelly, J. (eds.), Iontophoresis and Transmitter Mechanisms in the Mammalian Central Nervous System, Elsevier/North Holland Biomedical Press, New York, 441-443, 1978.
33. Moises, H., Woodward, D., Hoffer, B. and Freedman, R. Interactions of norepinephrine with Purkinje cell responses to putative amino acid neurotransmitters applied by microiontophoresis. Exp. Neurol., 64: 493-515, 1979.
34. Olson, L., Seiger, A., Taylor, D., Freedman, R. and Hoffer, B. Conditions for adrenergic hyperinnervation in hippocampus. I. Histochemical evidence from intraocular double brain grafts. Exp. Brain Res. 39: 277-288, 1980.

35. Taylor, D., Freedman, R., Seiger, A., Olson, L. and Hoffer, B. Conditions for adrenergic hyperinnervation in hippocampus. II. Electrophysiological evidence from intraocular double brain grafts. Exp. Brain Res. 39: 289-299, 1980.
36. APA Committee on Confidentiality. Model Law on Confidentiality of Health and Social Service Records. Amer. J. Psychiatry, 136: 137-144, 1979.
37. Freedman, R. and Carter, D.B. Neuroendocrine strategies in psychiatric research. In Timiras, P.S. and Vernadakis, A. (eds.), Hormones in Development and Aging, 1982, pp. 619-636.
38. Freedman, R. Neurochemical and psychopharmacological factors in mental illness. In Simons, R. and Pardes, H., Understanding Human Behavior in Health and Illness (2nd edition), 1981, pp. 513-523.
39. Marwaha, J., Palmer, M., Hoffer, B. and Freedman, R. Phencyclidine- induced depressions of cerebellar Purkinje neurons. Life Sciences, 26: 1509-1515, 980.
40. Freedman, R. Electrophysiology is not sufficient to determine modulatory influence. Behavioral and Brain Sciences, 2: 425-426, 1979.
41. Freedman, R., Bell, J. and Kirch, D. Clonidine therapy for co- existing psychosis and tardive dyskinesia. Amer. J. Psychiatry, 137: 629-630, 1980.
42. Olson, L., Seiger, A., Mathias, A., Freedman, R., Hoffer, B., Taylor, D. and Woodward, D. Intraocular brain grafts: A method for differentiating between intrinsic and extrinsic determinants of structural and functional development in the central nervous system. In: Neural Growth and Differentiation, E. Meisami and M.A.B. Brazier (eds.), Raven Press, New York, 1979, pp. 223-235.
43. Marwaha, J., Hoffer, B. and Freedman, R. Age-related electrophysiological changes in rat cerebellum. Brain Research, 201: 85-97, 1980.
44. Marwaha, J., Hoffer, B. and Freedman, R. Electrophysiological actions of neurotensin in rat cerebellum. Regulatory Peptides, 1: 115-125, 1980.
45. Olson, L., Seiger, A., Freedman, R. and Hoffer, B. Chromaffine cells can innervate brain tissue: Evidence from intraocular double grafts. Exp. Neurol., 70: 414-426, 1980.
46. Marwaha, J., Palmer, M., Hoffer, B. and Freedman, R. Phencyclidine inhibition of central neurons. 42nd Meeting of Committee on Problems of Drug Dependence, Hyannis, Massachusetts. NIDA Research Monograph 34: 187-192, 1980.
47. Marwaha, J., Hoffer, B.J. and Freedman, R. Electrophysiological changes at a central noradrenergic synapse during thallium toxicosis. Toxicol. and Appl. Pharm., 56: 345-352, 1980.
48. Marwaha, J., Palmer, M.R., Woodward, D.J., Hoffer, B.J. and Freedman, R. Electrophysiological evidence for presynaptic actions of phencyclidine on noradrenergic transmission in rat cerebellum. J. Pharmacol. and Exp. Ther. 215: 606-613, 1980.
49. Sorensen, S., Carter, D., Marwaha, J., Baker, R., and Freedman, R. Disinhibition of rat cerebellar purkinje neurons from noradrenergic inhibition during rising blood ethanol. J. Study of Alcohol, 908-917, 1980.
50. Marwaha, J., Palmer, M., Hoffer, B., Rice, K.C., Paul, S., Freedman, R. and Skolnick, P. Differential electrophysiological and behavioral responses to optically active derivatives of phencyclidine. Naunyn- Schmiedeberg's Arch. of Pharmacology, 315: 203-209, 1981.
51. Adler, L.E., Bell, J., Kirch, D., Friedrich, E. and Freedman, R. Psychosis associated with clonidine withdrawal. Amer. J. Psychiatry 139: 110-112, 1982.
52. Sorensen, S., Carter, D., Marwaha, J., Baker, R. and Freedman, R. Disinhibition of cerebellar Purkinje neurons from noradrenergic inhibition during the rising phase of blood ethanol. J. of Studies on Alcohol 42: 908-917, 1981.
53. Freedman, R., Kirch, D., Bell, J., Adler, L., Pecevich, M., Pachtman, E. and Denver, P. Clonidine treatment of schizophrenia: Double-blind comparison to placebo and neuroleptic drugs. Acta Psychiatrica Scand. 65: 35-45, 1982.

54. Olson, L., Bjorklund, H., Hoffer, B., Freedman, R., Marwaha, J., Palmer, M. and Seiger, A. Silent Purkinje cells: An effect of early chronic lead treatment on cerebellar grafts. In: Symposium on Chemical Indices and Mechanisms of Organ Directed Toxicity, S. Brown and D. Davies, (eds.), Pergamon Press, New York, 1981, pp. 243-245.
55. Palmer, M., Bjorklund, H., Freedman, R., Taylor, D., Marwaha, J., Olson, L., Seiger, A. and Hoffer, B. Permanent impairment of spontaneous Purkinje cell discharge in cerebellar grafts caused by chronic lead exposure. Toxicol. Appl. Pharm., 60: 431-440, 1981.
56. Marwaha, J., Hoffer, B. and Freedman, R. Electrophysiologic evidence for histamine receptors in rat cerebellum. Exp. Neurol., 74: 285-292, 1981.
57. Bickford, P., Palmer, M., Rice, K., Hoffer, B. and Freedman, R. Electrophysiological effects of phencyclidine on rat hippocampal pyramidal neurons. Neuropharmacology, 20: 733-742, 1981.
58. Adler, L.E., Pachtman, E., Franks, R. and Freedman, R. Neurophysiologic evidence for a defect in neuronal mechanisms involved in sensory gating in schizophrenia. Biol. Psych. 17: 639-654, 1982.
59. Marwaha, J., Hoffer, B.J., Geller, H.M. and Freedman, R. Electrophysiological interactions of antipsychotic drugs with central noradrenergic pathways. Psychopharmacology, 73: 126-133, 1981.
60. Bickford, P., Palmer, M.R., Hoffer, B.J. and Freedman, R. Interactions of phencyclidine with cholinergic excitations of hippocampal pyramidal neurons. Neuropharmacol., 21: 729-732, 1982.
61. Leder, R., Kirch, D., Murphy, R., Clay, K. and Freedman, R. Partial resolution of tardive dyskinesia with treatment of co-existing thyrotoxicosis. Canadian J. Psychiatry, 28: 134-136, 1983.
62. Marwaha, J., Hoffer, B.J. and Freedman, R. Changes in noradrenergic neurotransmission in rat cerebellum during aging. Neurobiology of Aging, 2: 95-98, 1981.
63. Sorensen, S., Dunwiddie, T., McClearn, G., Freedman, R. and Hoffer, B. Ethanol-induced depressions In cerebellar and hippocampal neurons of mice selectively bred for differences in ethanol sensitivity: An electrophysiological study. Pharm. Biochem. Behav. 14: 227-234, 1981.
64. Palmer, M.R., Freedman, R. and Dunwiddie, T.V. Interactions of a neuroleptic drug (fluphenazine) with catecholamines in hippocampus. Psychopharmacology, 76: 122-129, 1982.
65. Sorensen, S., Johnson, S. and Freedman, R. Persistent effects of amphetamine on cerebellar Purkinje neurons following chronic administration. Brain Res., 247: 365-371, 1982.
66. Palmer, M.R., Sorensen, S., Freedman, R., Olson, L. and Hoffer, B. Differential ethanol sensitivity of intraocular cerebellar grafts in long and short-sleep mice. J. Pharmacol. Exp. Therap. 222: 480-487, 1982.
67. Freedman, R., Adler, L.E., Waldo, M.C., Pachtman, E. and Franks, R.D. Neurophysiological evidence for a defect in inhibitory pathways in schizophrenia: Comparison of medicated and drug-free patients. Biol. Psychiat. 18: 537-551, 1983.
68. Olson, L., Bjorklund, H., Freedman, R., Goldowitz, D., Hoffer, B., Palmer, M., Seiger, A., Taylor, D. and Woodward, D. Intrinsic and extrinsic determinants of brain development as evidenced by grafting of fetal brain tissue. In: Developing and Regenerating Vertebrate Nervous Systems, Proc. 4th Tarbox Parkinson's Disease Symposium, Lubbock, TX, 1982. P. Coates, R. Markwald, A. Kenny, (eds.), Alan R. Liss, New York, 1983, pp. 121-150.
69. Franks, R., Adler, L.E., Waldo, M., Alpert, J. and Freedman, R. Neurophysiological studies of sensory gating in mania: Comparison with schizophrenia. Biol. Psychiatry, 18: 989-1005, 1983.
70. Lubman, A., Emrick, C., Mosimann, W.F. and Freedman, R. Altered mood and norepinephrine metabolism following withdrawal from alcohol. Drug and Alcohol Dependence, 12: 3-13, 1983.
71. Johnson, S.W., Palmer, M.R. and Freedman, R. Effects of dopamine on spontaneous and evoked activities of caudate neurons. Neuropharmacology, 22: 843-851, 1983.
72. Palmer, M.R., Bickford, P., Hoffer, B. and Freedman, R. Electrophysiological evidence for presynaptic actions of phencyclidine on noradrenergic transmission in rat cerebellum and

hippocampus. In: Phencyclidine and Related Arylcyclohexylamines: Present and Future Applications, ed. by J.M. Kamenka, E.F. Domino and P. Geneste, NPP Books, Ann Arbor, MI, 1983, pp. 443-469.

73. Siegel, C., Waldo, M., Mizner, G., Adler, L.E. and Freedman, R. Deficits in sensory gating in schizophrenic patients and their relatives. Arch. Gen. Psychiat., 41: 607-612, 1984.
74. Kirch, D., Hattox, S., Bell, J., Murphy, R. and Freedman, R. Plasma homovanillic acid and tardive dyskinesia during neuroleptic maintenance and withdrawal. Psychiat. Res., 9: 217-223, 1983.
75. Sorensen, S. and Freedman, R. Effects of Alprazolam on the activity of rat cerebellar Purkinje neurons: Evidence for mediation by norepinephrine. Drug Development Research 3: 555-560, 1983.
76. Johnson, S.W., Freedman, R. and Sorensen, S. Effects of d- amphetamine withdrawal in rats and man. (Letter to the Editor), Amer. J. Psychiat. 140: 953-954, 1983.
77. Olson, H.E., Biddinger, J.E., Freedman, R. and Marquardt, J.E. Interminability in healthy appearing patients. Hospital and Community Psychiatry, 35: 710-714, 1984.
78. Johnson, S.W., Haroldsen, P.E., Hoffer, B.J. and Freedman, R. Presynaptic dopaminergic activity of phencyclidine in rat caudate. J. Pharmacol. Exp. Therap., 229: 322-332, 1984.
79. Freedman, R. Biopharmacological assessment and treatment of addiction disorders. In The Addictions: An Interdisciplinary Synthesis of Concepts and Treatments, H. Milkman and H. Shaffer, eds., Proceedings of The Addictions Conference, Chapter 3, pp. 21-27, 1985.
80. Bickford, P.C., Mosimann, W.F., Hoffer, B.J. and Freedman, R. Effects of the selective noradrenergic neurotoxin DSP4 on cerebellar Purkinje neuron electrophysiology. Life Sciences, 34: 731-741, 1984.
81. Rose, G., Pang, K., Palmer, M. and Freedman, R. Differential effects of phencyclidine upon hippocampal complex-spike and theta neurons. Neurosci. Letters, 45: 141-146, 1984.
82. Johnson, S.W., Hoffer, B.J. and Freedman, R. Correlation of Purkinje neuron depression and hypnotic effects of ethanol in inbred strains of rats. Alcoholism: Clin. Exp. Res., 9: 56, 1985.
83. Johnson, S.W., Hoffer, B.J. and Freedman, R. Investigation of the failure of parenterally administered haloperidol to antagonize dopamine released from micropipettes in the caudate. J. Neuroscience, 6: 572- 580, 1986.
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85. Freedman, R., Waldo, M., Adler, L., Baker, N., Levin, D. and Deitrich, R. Electrophysiological effects of low dose alcohol on human subjects at high altitude. Alcohol and Drug Research, 6: 289-297, 1986.
86. Freedman, R. Book Review: Neurophysiological Correlates of Normal Cognition and Psychopathology, Adv. in Biol. Psychiatry, Vol. 13; Perris, Kemali and Koukkou-Lehmann, Eds. (Basel, S. Karger AG, 1983). Amer. J. Psychiatry, 1986.
87. Freedman, R. Book Review: EEG and Evoked Potentials in Psychiatry and Behavioral Neurology; J.R. Hughes and W.P. Wilson (Boston, Butterworths,1983). Amer. J. Psychiatry, 142: 381, 1985.
88. Freedman, R. Book Review: Childhood Psychosis in the First Four Years of Life; H. Massie and J. Rosenthal (New York, McGraw-Hill, 1984). Amer. J. Psychiatry, 143:242, 1986.
89. Kirch, D., Palmer, M., Egan, M. and Freedman, R. Electrophysiological interactions of haloperidol and reduced haloperidol with dopamine, norepinephrine and phencyclidine in rat brain. Neuropharm. 24: 375, 1985.
90. Kim, M., Pang, K., Freedman, R. and Palmer, M. Electrophysiological effects of cyclazocine on rat cerebellar Purkinje neurons. Alcohol and Drug Research, 6: 23-26, 1985.
91. Wang, Y., Palmer, M., Freedman, R., Hoffer, B.J., Mattson, M.V., Lessor, R.A., Rice, K.C. and Jacobson, A.E. Antagonism of PCP action by metaphit in rat cerebellar Purkinje neurons: An electrophysiological study. PNAS, 83: 2724-2727, 1986.

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