CURRICULUM VITAE

NAME: Morris Alan Fisher, MD, FAAN, FANA, FAANEM

 E-Mail: morris.fisher@sbcglobal.net

 Cell Phone: 708/469-9097

###  Diplomat, American Board of Psychiatry and

 Neurology (

 Diplomat, American Board of Electrodiagnostic

 Medicine (1988)

 Diplomat, Neurology with Added Qualifications in Clinical Neurophysiology (1994)

#  Active Member, American Association of

 Electromyography and Electrodiagnosis (1976)

**EDUCATION:**

1951 ‑ 1957 Horace Mann School, Bronx New York

1957 ‑ 1961 Yale University, B.A. Magna Cum Laude (Phi Beta

 Kappa)

1961 Entered Harvard Medical School

1968 M.D. Harvard Medical School

**PROFESSIONAL TRAINING AND EXPERIENCE:**

**Postgraduate Training**:

1963 ‑ 1965 Research Assistant (Neurophysiology),

 Massachusetts General Hospital, Boston, MA

1964 ‑ 1965 Special Graduate Student

 (Biology‑Neurophysiology and Biological

 Electronics), Massachusetts Institute of

 Technology, Cambridge, MA

1968 ‑ 1969 Internship (Medicine), Cleveland Metropolitan

 General Hospital, Cleveland, OH

1969 ‑ 1970 Assistant resident in Neurology, Massachusetts

 General Hospital, Boston, MA

1972 ‑ 1974 Clinical Fellow of Harvard University in the

 Department of Neurology at the Massachusetts

 General Hospital

l974 ‑ l975 Fellow in Clinical Neurophysiology,

 Massachusetts General Hospital

**Academic Positions:**

1975 ‑ 1978 Assistant Professor, Dept. Neurological

 Science, Rush Medical College, Chicago,

 Illinois

l978 ‑ l980 Associate Professor, Dept. Neurological

 Sciences, Rush Medical College

1980 ‑ 1989 Associate Professor, Department of Neurology,

 Pritzker School of Medicine

 The University of Chicago

1989 - 1991 Associate Professor, Department of Neurology,

 College of Medicine University of Illinois at

 Chicago

1991 - 1992 Professor of Clinical Neurology, College of

 Medicine, University of Illinois at Chicago

1992-Present Professor of Neurology, Loyola University Medical Center, Stritch School of Medicine

2012-Present Adjunct Professor Department of Physical Medicine and Rehabilitation, Northwestern University Feinberg School of Medicine

2015-Present Adjunct Professor Department of Neurology, Northwestern University Feinberg School of Medicine

**Hospital Positions:**

l970 - l972 Neurologist U.S. Army Medical Corps, Womack

 Army Hospital, Fort Bragg, NC

1975 - 1977 Assistant Attending in Neurology, Rush-

 Presbyterian St. Luke's Medical Center, Chicago, IL

1975 - 1980 Head, Section of EMG and Clinical Neurophysiology, Rush-Presbyterian St. Luke's Medical, Chicago, IL

1978 - 1980 Co-Director, Muscular Dystrophy Association

 Clinic, Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL

1980 - 1982 Associate Neurologist, Michael Reese Hospital

 and Medical Center, Chicago, IL

1982 -1992 Attending Neurologist, Michael Reese Hospital

 and Medical Center, Chicago, IL

1980 ‑ 1982 Director, Electromyography (EMG, Somatosensory

 Evoked Responses) Laboratory, Michael Reese

 Hospital and Medical Center, Chicago, IL

1982 ‑ l987 Co‑Director, Muscular Dystrophy Association

 Clinic, Michael Reese Hospital and Medical Center, Chicago, IL

l982 ‑1992 Director, Clinical Neurophysiology

 Michael Reese Hospital and Medical Center, Chicago, IL

l985 ‑ l986 Acting Vice Chairman of Neurology, Michael Reese

 Hospital and Medical Center, Chicago, IL

l986 ‑ 1990 Vice Chairman, Department of Neurology Michael

 Reese Hospital and Medical Center, Chicago, IL

1988 ‑ 1989 Director, Low Back Pain Program, Michael

 Reese Hospital and Medical Center, Chicago, IL

1990 - 1992 Acting Chief of Service, Department of Neurology,

 Michael Reese Hospital and Medical Center (Humana Hospital Michael Reese, Chicago, IL

1992 - 2006 Attending Neurologist, Hines VAH and Loyola University Medical Center; Director Neuromuscular Program, Loyola University Medical Center; Director, EMG Laboratory, Hines VAH, Hines, IL

2006-2015 Attending Neurologist Hines VAH

1993 -2010 Director, Clinical Diagnostic Neurophysiology Laboratories, Hines VAH, Hines, IL

2001-2006 Director Clinical Neurophysiology Program, Loyola University Medical Center, Maywood, IL

2008-2009 Acting Chief of Neurology, Hines VAH

2008-2011 Lecturer, Department of Neurology at Rosalind Franklin University of Medicine and Science,

2015 - Consulting Neurologist Hines VAH

**Organizational Activities:**

 - *American Association Electromyography and Electrodiagnosis (AAEE, l983-l989).*

 *- American Association of Electrodiagnostic Medicine (AAEM, l989-1997)*

l977 - l978 Constitutional Committee

l979, l981-1988 Examiner for Active Membership

1981 - 1984 Examination Committee

l984 ‑ l985 Ad Hoc Committee to Evaluate Affiliation with

 Muscle Nerve

l985 ‑ 1988 Executive Board

l986 ‑ 1990 Chairman, Quality Assurance Committee

l987 ‑ 1988 Fee Schedule Committee

l988 ‑ 1992 Director, AAEE Regional Workshops, Chicago

1989 - 1991 Nominating Committee

1990 - 1991 Chairman, Nominating Committee

1991 - 1994 Workshop Committee

1994 - 1997 Professional Practice Committee

 - *American Academy Clinical Neurophysiology*

1993 - 1996 Board of Directors

 Long Range Planning Committee

1997 - 1999 President Elect

1999-2001 President

 - *American Board Electrodiagnostic Medicine*

1989-2002, 2005, 2008 Examiner

 ‑ *American Medical Association*

l985‑1987, l990 Invited Participant, Section Council on

 Neurology

 ‑ Muscular Dystrophy Association

l986 ‑ l987 Chapter Member, Chicago ‑ Cook County

 *The Neuropathy Association*

1994- 1996 Board of Directors

2005 – Medical Advisory Board

2010 – Director Center of Excellence at the Hines VAH

 *American Clinical Neurophysiologic Society*

2007- Program Committee

2007- CCNDP-WorkGroup

 *Harvard Medical School*

2015-2020 President Harvard Medical Society of Chicago

**Hospital Committees:**

Past: Medical Board, Professional Activities Committee, Library Committee - Michael Reese Hospital (Humana Hospital Michael Reese);Quality Assurance Committee, Rules Committee, Credentials Committee - Department of Neurology, Michael Reese Hospital Humana Hospital Michael Reese)

*Hines VAH*: TQI Committee, Physician Order Entry Task Force, Pain Clinic, Med/Surg Users Group

 *LUMC*: Residency Selection, Neurology Clerkship, Promotion, Clinical Neurophysiology, Fellowship, Nominating

 Resident Selection, Research, Graduate Medical Education

**Organizations:**

 American Academy of Neurology (Fellow)

 American Neurological Association (Fellow)

American Association of Neuromuscular and

 Electrodiagnostic Medicine

 American Association for the Advancement

 of Science

American Academy of Clinical Neurophysiology (Fellow)

 American Academy of Immunotherapy

 Peripheral Nerve Society

**Editorial Positions:**

 Consulting Editor, Electroencephalography and Clinical Neurophysiolgy (1997- 2003)

 Editorial Board, American Society for

 Clinical Evoked Potentials (1988-1990)

 Editorial Board, Neurology and Clinical Neurophysiology

 (2001-2003)

**Ad Hoc Reviewer**:

 Acta Neurologica Scandinavica

 Arch Neurol

 Brain

 Clin Neuropharm

 Clin Neurophysiol

 Diabetes

 Electroenceph Clin Neurophysiol

 Eur J of Neurology

 J Clin Neurophysiol

 J Neurol Sci

 Medicine & Science in Sports & Exercise

 Measurement Science and Technology

 Muscle Nerve

 Neurology

 New England Journal of Medicine

 Perspectives in Biology and

 Medicine

 The Scientific World

**Miscellaneous:**

- Committee, Clinical Guidelines for Low Back Problems (1993).

-Reviewer: Agency for Health Care Policy and Research (AHCPR)(1993)

-Chairman, Administrative Board of Investigation, Alleged

 Quality care Issue, North Chicago VAH, 1993

-Course Co-Director: Clinical Neurophysiology: a Focused Review and Recent Advances. Department of Neurology, Loyola University Stritch School of Medicine, February 19, 1994.

-Director: Special Interest Forum, "Upper Motor Syndromes and their Electrophysiology", AACN Meeting, Boston, 1994.

-Examiner, Part II Examination of the American Board of Psychiatry and Neurology March, 1998

-Polyneuropathy Task Force sponsored by American Academy

 Neurology, American Association Electrodiagnostic

 Medicine, and American Academy Physical Medicine

 And Rehabilitation Medicine. 2002-2008

-Autoimmune Neuropathies, Bermuda, 2004.

-PhD Review Committee: (1)Jason Sarkey, (2)Michael Calik, (3)Sahadev A. Shankarappa. Program in Neuroscience,

 Loyola University Chicago Stritch School of Medicine

**Research Funding:**

1993 – Co-PI: “Effects of Supported Standing and Upper Body Exercise on Lower Extremity Spasticity in Persons with Spinal Cord Injury”. Research Rehabilitation and Development, Hines VAH, $4100 for pilot studies (PI: E. Langbein, Ph.D.; Co-PI: L. Fehrs, M.A.).

1994 – Co-PI: VA Golden Age Games Research Award. Research Rehabilitation and Development, Hines VAH, $5,000. (PI: E. Langbein, Ph.D.; Co-PI: L. Fehrs, M.A.; Collaborator: P. Sibley, R.N.)

1994 – Co-PI: “Effects of Supported Standing and Upper Body Exercise on Lower Extremity Spasticity in Persons with Spinal Cord Injury”. Research Rehabilitation and Development Service, Department of Veterans Affairs. Total funding - $124,500 (FY 95 $72,475, FY96 $40,500, FY97 $11,525). (PI: E. Langbein, Ph.D.; Co-PI: L. Fehrs, M.A.; Collaborator: P. Sibley, R.N.)

1997 – PI: A Phase III Multicenter, Double-Blind, Placebo Controlled, Parallel-Group Study of the Efficacy and Safety of Recombinant Human Nerve Growth Factor (rhNGF) in Subjects with Diabetic Neuropathy. Sponsor – Genentech, Inc. 10/’97- 1/99. Income - $81,000.

1998 – PI: Investigation of Neuropathies in Patients with Monoclonal Gammopathies of Uncertain Significance (MGUS). Intramural Funding (LUMC#9234). 7/’98-12/’98. $2500.

1998 – Co-PI: Molecular Mechanisms of MGUS Neuropathies. CARES Hines VAH). 6/’98-5/’99. $15,000 (PI: George DeVries, Ph.D.)

1998 - Collaborator: National Health Survey of Gulf War Era Veterans and their Families. VA Cooperative Study #458. 9/’98-3/’00. Anticipated income - $10,000 (PI: John Crayton, M.D.)

1999 – Co-PI: Immunological Disturbances in Complications of Diabetes Mellitus. Falk Foundation Neuroscience Award. 10/’99-10/’00. $20,000.

2000 - Co-Investigator :Humoral Mechansims of MGUS Neuropathy in

Veterans. VA Merit Grant - $111,900/year x 3 years starting 6/1/2000 (PI: Evan B. Stubbs, Jr., Ph.D.)

2001 – Co-PI: Characterization of Antibody-Mediated Peripheral

 Nerve Injury in MGUS Neuropathy. Falk Foundation

 Neuroscience Award. 4/’01-4/02. $20,000

2003- Co-Investigator :Humoral Mechanisms in MGUS Neuropathy in

Veterans. VA Merit Grant - $183,000 year 1, $150,000/year x years 2-4. starting 1/1/2004 (PI: Evan B. Stubbs, Jr., Ph.D.)

2004 – Co-PI : Exercise-Induced Neuroplasticity-Mediated

Rehabilitation in Type 2 Diabetic Veterans with Peripheral Neuropathy. VA Merit Grant - $119,600 year 2004,$300,575 year 2005, 310,200 year 2006, 318,225 year 2007, $243,900 year 2008. starting 7/04 (PI: Evan Stubbs, Jr., Ph.D.)

2008 - Co- Investigator :Leukocyte Transendothelial Migration

and Acute Inflammatory Neuropathy ( Pilot Study).

$31,000 Neuroscience Institute and Research Funding Committee LUMC (PI: Evan Stubbs, Jr., PhD)

2008 – Co- Investigator: Can Neural Adapatation after Severe

 Brain Injury be Facilitated? VA Merit Grant$295,900 year 1;

 $269,200 year 2; $237,700 year 3. starting 7/01/2007 (PIs:

 Pape, Theresa Louise-Bender DrPH, MA; Steiner, Monica, MD,

 McNamee, Shane, MD)

2009 - Co – PI: Exercise-Facilitated NeuroRehabilitation in

 Diabetic Neuropathy. VA Merit Grant (R6954R).

 $231,200/year for 4years 10/01-9/30/13. (Evan Stubbs, Jr.

 PI)

Research collaborator:

1993 - Enhanced Carbon Filament Prosthesis as Substrate for Regrowth of Injured Spinal Cord (Talet Khan).

**PUBLICATIONS**

**PEER REVIEWED JOURNAL ARTICLES**

1. **Fisher, M.A**., Hagen, D.Q., and Colvin, R.B. Aminocoxyacetic

 Acid: Interaction with Gamma‑amino butyric acid and blood‑bran

 barrier. Science 163: 16605‑1670, 1966.

1. Levine, D.R., **Fisher, M.A**., and Caviness, V.A. Porencephaly

 with Microgyria: A Pathologic Study. Acta Neuropath 29:

 99‑113, 1974.

1. Garcia, H.A., and **Fisher, M.A**. F response and H reflex

 analysis of the physiological unity of gravity and antigravity

 muscles in man. Acta Neurol Lat Amer 23: 231‑244, 1977.

1. **Fisher, M.A**., Shivde, A.J., Teixera, C., and Grainer, L.S. A

 clinical electrophysiological appraisal of the significance

 of radicular injury in back pain. J. Neurol Neurosurg Psych

 41: 303‑6, 1978.

1. **Fisher, M.A**., and Penn, R.D. Evidence for changes in

 segmental motoneuron pools by chronic cerebellar stimulation

 and its clinical significance. J Neurol Neurosurg Psych

 630‑635, 1978.

1. **Fisher, M.A**. An Electrophysiological appraisal of relative

 segmental motoneuron pool excitability in flexor and extensor

 muscles. J Neurol Neurosurg Psych 41: 624‑629,1978.

1. **Fisher, M.A**., Shahani, B.T., and Young R.R. Quantitative

 assessment of excitability at segmental levels of the CNS

 following acute rostral lesions. I Study of the F response.

 Neurology 28: 1265‑1271, 1978.

1. **Fisher, M.A.,** Shahani, B.T., and Young R.R. Quantitative

 assessment of excitability at segmental levels of the CNS

 following acute rostral lesions. II Study of the blink reflex.

 Neurology 29: 45‑50, 1979.

1. **Fisher, M.A.,** Shahani, B.T., and Young, R.R.

 Electrophysiological analysis of the motor system during the early phase after a stroke. I Studies of the Flexor reflex.

 Arch Phys Med Rehab 60: 7‑11, 1979.

1. **Fisher, M.A.,** Shahani, B.T., and Young, R.R.

 Electrophysiological analysis of the motor system during the

early phase after a stroke. II Studies of the "suppressive"

effect of the vibration. Arch Phys Med Rehab 60: 11‑14, 1979.

1. Milner‑Brown, H.S**., Fisher, M.A.,** and Weiner, W. Electrical properties of motor units in Parkinsonism and a possible relationship with bradykinesia. J Neurol Neurosurg Psych 42: 35‑41,1979.
2. **Fisher, M.A**., Shivde, A.J., Teixera, C. and Grainer, L.S.

The F response ‑ a clinically useful physiological parameter

for the evaluation of radicular injury. Electromyogr clin Neurophysiol 19: 65‑75, 1979.

1. Garcia, H.A., **Fisher, M.A.,** and Gilai, A. H reflex analysis of segmental reflex excitability in flexor and extensor muscles. Neurology 29: 984‑991, 1979.
2. **Fisher, M.A**. Relative changes with contraction in the central excitability state of the tibialis anterior and calf muscles. J Neurol Neurosurg Psych 43: 243‑247, 1980.
3. Garcia, H.A., Milner‑Brown, H.S., and **Fisher, M.A.** "Turns" analysis in the physiological evaluation of neuromuscular disorders. J Neurol Neurosurg Psych 43: 1091‑1097, 1981.
4. Shivde, A.J., Dreizin, I., and **Fisher, M.A**. The carpal tunnel syndrome: a clinical electrodiagnostic analysis. Electromyogr clin Neurophysiol 21:143‑153, 1981.
5. **Fisher, M.A.,** Milner‑Brown, H.S., and Garcia, H.A. Automatic analysis of motor unit potentials with varying loads. Electromyogr clin Neurophysiol 25:557-566, l985.
6. **Fisher, M.A**. F response latency determination. Muscle Nerve. 5: 730‑734, 1982.
7. **Fisher, M.A.** Cross correlation analysis of F response

variability and its physiological significance. Electromyogr clin Neurophysiol 23: 329‑339, 1983.

1. **Fisher, M.A.** F response analysis of motor disorders of central origin. J Neurol Sci 62: 13‑22, 1983.
2. **Fisher, M.A**. Peripheral Neuropathy. Geriatrics 39: 115‑129, 1984.
3. Hammer R.A., Patel D.V., Levin B., and **Fisher M.A**. Primary osteogenic sarcoma of the spine. Skeletal Radiology. 12: 276‑297, 1984.
4. **Fisher, M.A**., Kaur, D., and Houchins, J. Electrodiagnostic examination, back pain, and entrapment of posterior rami. Electromyogr clin Neurophysiol 25: 183‑189, 1985.
5. **Fisher M.A.,** Perlik S.J. N‑20 and P‑40 somatosensory evoked potentials‑‑thalamic lesions and subcortical origin. Acta NeurolScand 71: 25‑30, 1985.
6. **Fisher M.A.** F response latencies and durations in upper motoneuron lesions. Electromyogr clin Neurophysiol. 26: 327‑332, l986.
7. Perlik S.J., **Fisher M.A.,** Patel D.V., Slack C. On the usefulness of somatosensory evoked responses for the evaluation of lower back pain. Arch Neurol 43: 907‑9l3, l986.
8. Perlik S.J., **Fisher M.A**. Somatosensory evoked response evaluation of cervical spondylytic myelopathy. Muscle Nerve. l0: 48l‑489, l987.
9. Kelly, M.A., Perlik, S.J., **Fisher, M.A.** Somatosensory evoked potentials in lacunar syndromes of pure motor and ataxic hemiparesis. Stroke. l8:1093-l097, l987.
10. **Fisher M.A**. F/M ratios in polyneuropathy and spastic hyperreflexia. Muscle Nerve. 11:217‑222, 1988.
11. **Fisher, M.A.** Inhibition of motoneuron discharge by peripheral nerve stimulation: an F response analysis. Muscle Nerve. 14:120-123, 1991.
12. **Fisher, M.A.** Physiological and clinical considerations of the H reflex and F response. Muscle Nerve. 15:1223-1233, 1992.
13. Quality Assurance Committee AAEE, **Morris A. Fisher**, (Co-Chair)Suggested guidelines for electrodiagnostic medical consultations. Muscle and Nerve. Muscle Nerve. 15:247-253, 1992.
14. Perlik, S., Van Egeren, R., Fisher, M.A. SSEP surgical monitoring: observations during combined isoflurane-nitrous oxide anesthesia. Spine. 17:273-276, 1992.
15. Walk, D., Doundoulakis, S., Hemmati, M., **Fisher, M.A.** Somatosensory evoked responses in the evaluation of lumbosacral radiculopathies. Neurology. 42:1197-1202, 1992.
16. Walk, D., **Fisher, M.A.** Effects of cutaneous stimulation on ipsilateral and contralateral motoneuron excitability: an analysis using H reflexes and F waves. Electromyogr clin Neurophysiol 33:259-264, 1993.
17. **Fisher, M.A**., Hoffen, B., Hultman, C.: Normative F wave values and the number of recorded F waves. Muscle Nerve. 17:1185-1889, 1994.
18. **Fisher, M.A**., Itkin, A: Vrms/T quantitation: usefulness in patients with neuropathies. Muscle Nerve 18:1398-1402, 1995.
19. **Fisher, M.A.,** Hoffen, B. F-wave analysis of patients with carpal tunnel syndrome. Electromyogr clin Neurophysiol 37:27-31, 1997.
20. **Fisher, M.A.** Root mean square voltage/turns in chronic neuropathies is related to increase in fiber density. Muscle Nerve. 20:201-203, 1997.
21. **Fisher, M.A.,** Glass, S. Butorphanol (StadolR) - a study in Problems of Current Drug Information and Control. Neurology 48:1156-1160, 1997.
22. **Fisher, M.A.,** Leehey, D.J., Vasant, G., Todd, I.: Phrenic nerve palsies and persistent respiratory acidosis in a patient with respiratory acidosis. Muscle Nerve. 20:900-902, 1997.
23. Wilson J.R., Bhoopalam N, **Fisher, M**. Hemolytic anemia associated with intravenous immunoglobulin. Muscle Nerve. 20:1142-1145, 1997.
24. Stubbs, E.B. Jr, **Fisher, M.A.,** Siegel, G.J. Anti-tubulin antibodies in a sensorimotor neuropathy alter tubulin polymerization. Acta Neuropathologica. 95:302-305, 1998.
25. **Fisher, M.A.** F-waves: clinical utility. Muscle Nerve 21:1098-1101, 1998.
26. Wilson, J.R., Stittsworth, J.D., Jr., Kadir, A., **Fisher, M.A.** Conduction velocity vs. amplitude analysis: evidence for demyelination in diabetic neuropathy. Muscle Nerve. 21:1228-1230, 1998.
27. Eisen, A., **Fisher, M**. The F-wave. Electroenceph. Clin. Neurophysiol. Suppl. 52:255-257, 1999.
28. Randall, D.P., **Fisher, M.A**., Thomas, C. Rhabdomyolysis as the presenting manifestation of calciphylaxis. Muscle Nerve 23:289-293, 1999.
29. Wilson, J.R., Park, Y., **Fisher, M.A.** Electrodiagnostic criteria in CIDP: comparison with diabetic neuropathy. Electromyogr clin Neurophysiol 40:181-185,2000.
30. Lawlor, M.W., Richards, M.P., **Fisher, M.A.,** Stubbs,Jr.,E.B. Sensory nerve conduction block in experimental MGUS neuropathy. Muscle Nerve. Muscle Nerve 24:809-816, 2001.
31. Ellis, T.E., Le P.T., DeVries G., Stubbs E., **Fisher M.,** Bhoopalam N. Alterations in CD30+ T cells in monoclonal gammpoathy of undetermined significance (MGUS). Clin Immunol 98:301-307, 2001.
32. Wilson, J.R., Park, Y., Stittsworth, J.D., **Fisher, M.A.** Electrodiagnostic patterns in MGUS neuropathy. Electromyogr clin Neurophysiol 41:409-418, 2001.
33. **Fisher, M.A**. Electrophysiology of Radiculopathies. Clin Neurophysiol 113:317-335, 2002.
34. **Fisher, M.A.,** Wilson, J.R.: A clinical paradigm for characterizing patients with MGUS neuropathies consistent with varying fiber size injury. Neurology and Clinical Neurophysiology. Article Approved by Peer Review. <http://mitpress.mit.edu/e-journals/NCN/> 2002.
35. Lawlor, M.A., Richards, M.P., De Vries, G.H., **Fisher, M.A.,** Stubbs Jr., E.B. Antibodies to L-periaxin in sera of patients with peripheral neuropathy produce experimental sensory nerve conduction deficits. J. Neurochem. 83:592-600, 2002.
36. Stubbs Jr.,E.B., Lawlor, M.A., Richards, M.P., Sidiqqui , K., **Fisher, M.A.,** Bhoopalam, N., Siegel, G.J. Anti-Neurofilament antibodies in MGUS neuropathy produce experimental motor nerve conduction block. Acta Neuropathologica. Acta Neuropathol 105:109-116, 2003.
37. **Fisher, M.A.** Physicians and the Pharmaceutical Industry: a Dysfunctional Relationship. Perspectives in Biology and Medicine. 46:254-272, 2003.
38. **Fisher, M.A.,** Naved, S. Vrms/T Quantitation.in Patients with Spinal Stenosis. Neurology and Clinical Neurophysiology <http://mitpress.mit.edu/e-journals/NCN/> 2003.
39. England, J.D., Gronseth, G.S., Franklin, G., Miller, R.G., Asbury, A.K., Carter, G.T., Cohen, J.A., **Fisher, M.A**., Howard, J.F., Kinsella, L.J., Latov, N., Lewis, R.Aa, Low, P.A., Sumner, A.J.. Distal symmetrical polyneuropathy: Definition for clinical research. Muscle Nerve 31:113-123, 2005; Neurology 64:199-207, 2005.
40. **Fisher, M.A.** Comparison of automated and manual F-wave measurements. Clin Neurophysiol. 116:264-269, 2005..
41. Wilson, J., Chawla, J., **Fisher, M**: Sensitivity and specificity of electrodiagnostic criteria for CIDP using ROC curves: comparison to patients with diabetes and MGUS neuropathies. J Neurol Sci. 231:19-28, 2005.
42. Chawla, J., Thomas, C., **Fisher, M.** Focal nodular sarcoid myositis: case report and literature review. Case Rep Clin Pract Rev 6: 2005.
43. Latov N, Gorson KC, Brannagan III TH, Freeman RL, Apostolski S, Berger AR, Bradley W, Briani C, Bril V, Busis V, Cros DP, Dalakas MC, Donofrio PD, Dyck PJB, England JD, **Fisher MA**, Hemmmann DN, Menkes DL, Sabenk Z, Sander HW, Triggs WJ, Vallat JM. Diagnosis and treatment of chronic immune-mediated neuropathies. J Clin Neuromuscular Dis 7:141-157, 2006.
44. Gozani SN, Kong X, **Fisher M.A.** Factors influencing F-wave latency detection of lumbosacral root lesions using a detection theory based model. Clin Neurophysiol. 117:1449-1457, 2006.
45. **Fisher, M.A.,** Chawla, J., Webber, Jr., Charles L. Deterministic recurrences of sequential F-waves. Neurol Neurophysiol Neurosci. 2006:8:1-12 <http://www.neurojournal.com>/496/533.
46. **Fisher, M.A**. Medicine and industry: a necessary but conflicted relationship. Perspectives in Biology and Medicine. 50:1-6, 2007.
47. **Fisher, M.A.** F-waves – physiology and clinical uses. *TheScientificWorldJOURNAL* 7:144-160, 2007.
48. **Fisher, M.A.,** Langbein, W.E., Collins, E.G., Williams, K., Corzine,L. Physiological improvement with moderate exercise in type II diabetic neuropathy. Electromyogr clin Neurophysiol 47:23-28, 2007.
49. **Fisher, M.A.,** Bajwa, R., Somashekar, K.N.  Lumbosacral radiculopathies – the importance to EDX information other than needle electromyography.  Electromyogr. clin. Neurophysiol. 47:377-384, 2007..
50. **Fisher, M.A.,** Bajwa, R., Somashekar, K.N. Routine electrodiagnosis and a multiparameter technique in lumbosacral radiculopathies. Acta Neurol. Scand. 118:99-105, 2008.
51. Bagai, K., Wilson, J.R., Khanna, M., Song, Y., L. Wang, **Fisher, M.A.** Electrophysiological patterns of diabetic Polyneuropathy. Electromyogr. clin. Neurophysiol. 48:139-145, 2008..
52. **Fisher, M.A**., Zhu, J.Q., Uddin, M.K., Grindstaff, P. Submaximal stimulation and F-wave parameters. J Clin Neurophysiol. 25:299-303, 2008.
53. England, J.D., Gronseth, G.S., Franklin, G., Carter, GT, Kinsella, L.J., Cohen, J.A., Asbury, A.K. Szigeti, K., Lupski, Latov, N.,Lewis, R.A., Low, P.A., **Fisher, M.A**., Herrmann, D., Howard, J.F., Lauria, G., Miller, R.G., Polydefkis, M., Sumner, A.J. Evaluation of distal symmetric polyneuropathy: The role of autonomic testing, nerve biopsy, and skin biopsy (an evidence-based review). Muscle *Nerve* 39:106-115, 2009.
54. **Fisher, M.A.** F-waves in lumbosacral radiculopathies: its time has come. Eur J Neurol 16: 1171–1172, 2009
55. Venizelos, A.P., Brown, H.G., **Fisher, M.A**. Rapidly fatalneuropathies and an ALS clinical presentation. Acta Neurol Scand.124 (4):282-289, 2011.
56. Venizelos, A., Park, Y., **Fisher. M.A.** A patient with ALS and atypical clinical and elctrodiagnostic features: a case report. Journal of Medical Case Reports. J Med Case Reports.Published online 2011 November 2. doi:  [10.1186/1752-1947-5-538](http://dx.crossref.org/10.1186/1752-1947-5-538)
57. Sood, A., Crisan, E., **Fisher, M**. [Cranial neuropathies, confusion, and ataxia— Challenges for diagnosis and therap**y**](http://www.scirp.org/journal/PaperInformation.aspx?PaperID=31765)**.** Case Reports in Clinical Medicine pp 147-151, Pub. Date: May 24, 2013 DOI: 10.4236/crcm.2013.22040.
58. Epstein, N.U., Guo, R., Farlow, M.R., Singh, J.P., **Fisher, M**. [Medication for Alzheimer's Disease and Associated Fall Hazard: A Retrospective Cohort Study from the Alzheimer's Disease Neuroimaging Initiative.](http://www.ncbi.nlm.nih.gov/pubmed/24357133) Drugs Aging. 31:125-129, 2014.
59. **Fisher, M.A.**F-waves in diabetes mellitus: answers and questions. Muscle Nerve 49:783-785, 2014
60. Li, X., **Fisher,M**., Rymer W.Z., Zhou, P. Application of the F-response motor unit number and amplitude distribution in hand muscles of stroke survivors. IEEE Trans Neural Syst Rehabil Eng 2015,Jul 8
61. **Fisher, M.**, Patil, V.J., Webber, C.L. Recurrence Quantification Analysis of F-waves and the evaluation of neuropathies. Neurol Res Int. Volume 2015 (2015), Article ID 183608

81 Stubbs, E.R., **Fisher, M.A.,** Miller, C.M., Jelinik, C.,

 Butler, J., McButney, C., Collins, E. Randomized Controlled

 Trial of Physical Exercise in Diabetic Veterans with Length-

 Dependent Distal Symmetric Polyneuropathy. Frontiers in

 Neurlogy. (2019) Front. Neurosci. 13:51. Doi:

 10.3389/fnins.2019.00051.

82 Klein, C., Rymer, W.Z., **Fisher, M.A.** Altered nerve excitability properties in chronic strikes are associated with reduced neuromuscular excitability. Journal Clinical Neurophysilogy. In press

**BOOK CHAPTERS AND INVITED REVIEWS**

1.Hejna, D.R., **Fisher, M.A**.: Electrodiagnosis in Meltzer W. (ed.)Practice of Surgery (Othopedics), Harper & Row, N.Y., l976, pp.1-23.

1. **Fisher, M.A.**: Physiological considerations in the EMG

evaluation of patients with back pain. In the Lumbar Spine.

C.V. Mosby Co., St. Louis, 1981, pp. 45‑53.

1. Dowben, R.A., Tierney, G.G., and **Fisher, M.A.:**

Electromyography. In Laboratory Medicine, E.J. Race (ed.)

Harper and Row, N.Y. 1982

1. **Fisher, M.A.:** Physiology and clinical use of the F response. Monograph, American Association Electromyography and Electrodiagnosis, 1981.
2. **Fisher, M.A.:** Electrodiagnosis. In Practice of Surgery. J.R. Denton and H.S. Goldsmith (eds.) Harper and Row, Phil., 1982, Chap. 17, 1‑22.
3. **Fisher, M.A**.: Peripheral Neuropathy. In Neurology for the

Non‑Neurologist. W.J. Weiner and G.G. Goetz (ed.). Harper and Row, N.Y., 1981, 181-201.

1. **Fisher, M.A.:** Peripheral Neuropathy. In Neurology for the

Non-Neurologist. W.J. Weiner and G.G. Goetz (ed.). Harper and Row, N.Y., l989, l57-173;

1. **Fisher M.A.,** and Mohr J.P.: Pain mechanisms, central and

referred pain. In Manual of Clinical Problems in

Neurology. Mohr J.P. (ed.). Boston: Little Brown, l984, 91‑92,

1. **Fisher, M.A.,** and Mohr, J.P.: Causalgia and limb pains. In Manual of Clinical Problems in Neurology. Mohr, J.P. (ed.). Boston: Little Brown, l984, 99-l0l.
2. **Fisher, M.A.,** and Mohr, J.P.: Low back pain and lumbar disc disease. In Manual of Clinical Problems in Neurology. Mohr, J.P. (ed.). Boston: Little Brown, l984 l0l-l05.
3. **Fisher M.A.:** Electrophysiological testing of peripheral nerves. In Manual of Clinical Problems in Neurology. Mohr J.P. (ed.). Boston: Little Brown, l984, ll9‑l2l.
4. **Fisher, M.A.:** Neuropathies. In Manual of Clinical Problems in Neurology. Mohr, J.P.: (ed.). Boston: Little Brown, l984, 318-319.
5. Gottlieb G.L., Myklebust B.M., Agarwal G.C., Penn R.D., and **Fisher, M.A.:** Reciprocal excitation; stretch reflex coactivation of muscle antagonists in cerebral palsy. In Cerebellar Stimulation for Spasticity and Seizures. Davis R.,Bloedal J.R.(eds). CRC Press, New York. 1984, 83-87.
6. **Fisher, M.A.,** and Gorelick, P.A.: Entrapment Neuropathies. Postgraduate Medicine. 77:l60‑l80, l985.
7. Mohr, J.P., **Fisher, M.A.:** Low back pain and lumbar disc disease. In Manual of Clinical Problems in Neurology. Mohr, J.P. (ed). Boston: Little Brown, l989, 97-l0l.
8. **Fisher, M.A.:** Other mononeuropathies of the upper extremity. In Clinical Electromyography. Brown W. and Bolton C. (eds). Boston: Butterworth, l987, ll9‑l58; 1993,271-304.
9. **Fisher, M.A.:** Whither F waves. In Recent Advances in Clinical Neurophysiology. Kimura J. and Shibasaki H. (eds). New York: Elsevier, 1996, 752-755.
10. **Fisher, M.A**.: H-reflex and F-response studies. In Electrodiagnosis in Clinical Neurophysiology. Aminoff M. New York, Churchill Livingstone, 1999, 323-336.
11. **Fisher, M.A**.: Use of cholinestrerase inhibitors in the therapy of myasthenia gravis. In Cholinesterase and Cholinesterase Inhibitors. Giacobini E. (ed.). London, Martin Dunitz, 2000, 249-262.
12. **Fisher, M.A**.: H Reflexes and F Waves: Fundamentals, Normal and Abnormal Patterns. Neurological Clin N Am 2002;20:339-360.
13. **Fisher, M.A.:** F Waves. In Neuromuscular Function and Disease. Brown W.F, Bolton C.F., and M.J. Aminoff (eds). Philadelphia, W.B. Saunders, 2003, Vol 1, 473-481.
14. **Fisher, M.A.:** Hoffman H reflex. In Encyclopedia of the Neurological Sciences. Aminoff M. and R. Daroff (eds.). San Diego, Academic Press, 2003, Vol 2, 577-578.
15. **Fisher, M. A.:** Reflexes, spinal cord and blink. In Encyclopedia of the Neurological Sciences. Aminoff M. and R. Daroff (eds.). San Diego, Academic Press, 2003, Vol 4, 137-140..
16. **Fisher, M.A.:** Peripheral Neuropathy. In Neurology for theNon-Neurologist. W.J. Weiner and G.G. Goetz (ed.). Lipppincott Willliams & Wilkins, Philadephia, 2004, 215-234.
17. **Fisher, M.A**: H-reflex and F-response studies. In: Electrodiagnosisin Clinical Neurology M Aminoff (ed) New York. Elsevier ChurchillLivingstone, 2005, 357-369,.
18. Rutkove, S.B., **Fisher M.A**., Kong, X, Megerian, J.T., Gozani, S.N. Electrodiagnostic Automation: Principles and Practice. Phys Med Rehabil Clin N Am. 2005;16:1015-1032*.*
19. **Fisher,M.A**.: H-Reflex and F-Response Studies. In:. Electrodiagnosis in Clinical Neurology. M. Aminoff (ed). Elsevier Saunders, 2012, 407-420.
20. **Fisher, M.A**.: Hoffman H-Reflex. In Aminoff M.J. and Daroff D.B. Encyclopedia of the Neurological Sciences. 2nd Edition, vol 2, pp 598-599,2014,Oxford:Academic Press.
21. **Fisher, M.A**.: Reflexes: Spinal Cord and Blink. In Aminoff M.J. and Daroff D.B. Encyclopedia of the Neurological Sciences. 2nd Edition, vol 4, pp 3-5,2014,Oxford:Academic Press.

**JOURNAL SYMPOSIUM**

**Fisher, M.A.** (editor). Medicine and Industry. Perspectives in Biology and Medicine. 50:1-88. 2007.

**MONOGRAPH ARTICLE**

Fehr, L.S., **Fisher, M.A.**, Langbein, E.W.,Sibley, P.S.: Physiological effects of upper body exercise on muscle Tone and reflexes in older persons. National Veterans Golden Age Games Research Monograph: Health-Related Activity. Department of Veterans Affairs and the Veterans of Foreign Wars. June, 1994.

**ABSTRACTS**

1. **Fisher, M.A.,** Shahani, B.T., and Young, R.R. Suppressive

effect of vibration: Changes early after a stroke (abs.)

 Arch Phys Med Rehab. 56: 536, 1975.

1. **Fisher, M.A.,** Shahani, B.T., and Young, R.R. Flexor reflex

changes early after a stroke (abs). Arch Phys Med Rehab 56: 536‑537, 1975.

1. **Fisher, M.A.,** Shahani, B.T., and Young, R.R. Changes in the F response during the early phase after a stroke. Abstracts, Fifth Congress of Electromyography.
2. Shahani, B.T., **Fisher, M.A**., and Young R.R. Changes in the

blink reflex during the early phase after a stroke. Abstracts, Fifth International congress of Electromyography, Rochester, Minn. 1975, p. 62.

1. **Fisher, M.A.,**Shahani, B.T., and Young R.R. Quantitative

assessment of excitability at segmental levels of the central nervous system caudal to acute lesions. Neurology, 26:366‑367, 1976.

1. **Fisher, M.A.** The F response as a measure of motoneuron

pool excitability in flexor and extensor muscles.

Electroenceph Clin Neurophys 43: 149, 1977.

1. Shivde, A.J., Teixera, C., **Fisher, M.A.** The use of "late"

responses in the evaluation of back pain: a

clinical‑physiological appraisal. Electroenceph Clin

Neurophys 43: 589, 1977.

1. Garcia, H.A., **Fisher, M.A.,** and Gilai, A.: H reflex analysis of segmental reflex excitability in flexor and extensor muscles. Neurology. 28: 338, 1978.
2. Shivde, A.J., Teixera, C., and **Fisher, M.A**.: The F response – a clinically useful physiological parameter for the evaluation of back pain. Electroenceph Clin Neurophys 45: 178, 1978.
3. **Fisher, M.A.:** Relative changes with contraction in the central excitability state of the tibialis anterior and calf muscles. Acta Neurol Scand Suppl. 73, 60: 171, 1979.
4. Milner‑Brown, H.S., **Fisher, M.A.,** Penn, R.D., and Weiner, W.J.: Pathophysiological mechanisms in cerebral palsy. Acta Neurol Scand. Suppl. 73, 60: 102, 1979.
5. **Fisher, M.A.:** F response latency ‑ duration correlations: an argument for the orderly antidromic activation of motoneurons. Muscle Nerve 3: 437, 1980.
6. **Fisher, M.A.** F response latency determination.

Muscle Nerve 4: 440, 1981.

1. **Fisher, M.A.** F response analysis in motor disorders of centralorigin. Neurology (New York) 32: A205, 1982.
2. **Fisher, M.A.** Evoked motor response durations ‑ a sensitive electrophysiological parameter. Muscle Nerve 5: 565, 1982.
3. Fisher, M.A.: F response discriminant analysis of upper motor neuron lesions. Neurology (Cleveland) 33 (Suppl 2): 129, 1983.
4. **Fisher, M.A.** F Response Latencies and Durations in Upper Motor Neuron Lesions. Muscle Nerve 6: 536, 1983.
5. Perlik S., **Fisher M.A.,** Patel D.V., and Slack C.:On the usefulness of somatosensory evoked reponses for the evaluation of back pain. Neurology 34 (Suppl. 1): 76, 1984.
6. Wess M.M., **Fisher M.A**.: Evoked motor response durations: differences in aging between men and women. Muscle Nerve 7: 577,1984.
7. **Fisher M.A.,** Perlik S.J.: Somatosensory evoked potentials: thalamic lesions and subcortical origin. Muscle Nerve 7: 584, 1984.
8. Perlik S.J., **Fisher, M.A.** Myelopathic cervical spondylosis: theimportance of lower exteremity somatosensory evoked responses. Muscle Nerve 8:6l8, l985.
9. **Fisher, M.A.,** Casey, L.C., Ellman, M.H., Perlik, S.J. Sleepapnea due to odntoid brainstem compression in a patient with rheumatoid arthritis. Neurology 36 (Suppl 1) l63, l986.
10. **Fisher M.A.** F wave/M amplitudes: comparison in patients with polyneuropathies and spastic‑hyperreflexia. Muscle Nerve 8:6l4,l985.
11. Perlik, S.J., **Fisher, M.A**. Postoperative Brown‑Sequard syndromewith intraoperative monitoring: an instructive lesson. Muscle Nerve 9:056, l986.
12. Rybicki, R.J., **Fisher, M.A.** Automated (turns) analysis of EMG: high diagnostic sensitiviy without measuring muscle tension. Muscle Nerve 9: 677, l986.
13. Feinerman, G.S., Perlik, S.J., **Fisher, M.A.** Focal nerve injury in diabetic polyneuropathy. Muscle Nerve l0: 65l, l987.
14. Perlik, S.J., Burke, A., Fisher, M.A. A clinical

electrophysiological study of the therapeutic benefit of high‑dose intravenous steroid therapy in arachnoiditis. Muscle Nerve 10: 651, 1987.

1. **Fisher, M.A.** F responses and neuromuscular efficiency; the relationship in normals and its disturbance with neurologic dysfunction. Neurology 38 (Suppl 1): 289, l988.
2. Shivde, A.J., **Fisher, M.A**. F chronodispersion in polyneuropathy. Muscle Nerve ll: 960-961, l988.
3. **Fisher, M.A.** Evidence for selective activation of faster conducting motor fibers in F waves. Muscle Nerve ll: 983, l988.
4. **Fisher, M.A.** Inhibition of motoneuron discharge by peripheral nerve stimulation: an F response analysis. Muscle Nerve 12: 758-759, l989.
5. Perlik, S.J., Van Egeren, R., **Fisher, M.A**. SSEP surgical monitoring: observations during combined isoflorane-nitrous oxide anesthesia. Muscle Nerve 12: 773, l989.
6. Walk, D., Doundoulakis, S., Somatosensory evoked responses in the evaluation of lumbosacral radiculopathies. Neurology 40 (Suppl 1): 162, l990.
7. Shivde, A.J., **Fisher, M.A.** Distal versus proximal influences of F chronodispersion in polyneuropathy. Muscle Nerve 13: 868, l990.
8. Walk, D., **Fisher. M.A.** A late response analysis of ipsilateral
9. and contralateral sensorimotor interactions. Muscle Nerve 13: 875, l990.
10. **Fisher, M.A.** Surface recorded EMG: observations on normal parameters and possible clinical utility. Muscle Nerve 15: 1201-1202, 1992,
11. Hoffen, B., **Fisher, M.A.,** Hultman, C.: Normative F-wave parameters and the number of recorded F-waves. Muscle Nerve 16: 1081, 1993.
12. Hoffen, B., **Fisher, M.A.** F-wave analysis of patients with carpal tunnel syndrome. Muscle Nerve 16:1098, 1993.
13. **Fisher, M.A**., Itkin, A.: RMS/T quantitation: usefulness in patients with neuropathies. Muscle Nerve 17:1093, 1994.
14. **Fisher, M.A.,** Fehr, L., Langbein, W.E., Itkin, A., Sibley, P.: Physiologic analyses of lower extremity muscle tone with upper extremity exercise. Muscle Nerve 17:1096, 1994.
15. **Fisher, M.A**. Whither F Waves - clinical and research perspectives. Electroenceph clin. Neurohysiol 97:S62, 1995.
16. **Fisher, M.A**. Root mean square voltage/turns in neuropathies is related to increase in fiber density. Muscle Nerve 18:1037, 1995.
17. **Fisher, M.A**., Siegel, G.J., Stubbs, E.B. Painful demyelinating polyneuropathy with IgM antibody to nerve-specific protein. Muscle Nerve 18:1068, 1995.
18. Stubbs, Jr., E.B., **Fisher, M.A.,** Siegel, G.J.: Serum IgM autoantibodies to nerve-specific beta-tubulin in a patient with sensorimotor polyneuropathy. Soc Neurosci Abstr 21:48, 1995.
19. Wilson, J. R., Kadir, A., Stittsworth, J. Jr., Fisher, M.A. Axonal and demyelinating - different processes but not distinctive. Muscle Nerve 19:1208-1209, 1996.
20. **Fisher, M.A.,** Leehey, D., Gandhi, V., Ing, T.: Persistent respiratory acidosis in a diabetic patient with phrenic nerve palsies. Muscle Nerve 19:1218-1219, 1996.
21. Wilson, J.R., Bhoopalam, N., Fisher, M.A. Hemolytic anemia with intravenous immunoglobulin therapy. Muscle Nerve 19:1223, 1996.
22. Park, Y.S., Wilson, J.R., **Fisher, M.A.** Current electrodiagnostic criteria fail to distinguish chronic inflammatory demyelinating polyneuropathy from diabetic neuropathy. Muscle Nerve 20:1069, 1997.
23. Park, Y.S., Wilson, J.R., **Fisher, M.A.** Multifocality: a usual electrodiagnostic finding in monoclonal gammopathy of undetermined significance. Muscle Nerve 21:1588-1589, 1998.
24. Stubbs, E.B., Jr., **Fisher, M.A.,** Siegel G.J. Serum IgM autoantibodies to nerve-specific β-tubulin in a patient with sensorimotor polyneuropathy. Soc. Neurosci. Abstr. 21:48, 1999.
25. Wilson, J., **Fisher, M**.: Electrodiagnostic patterns in MGUS neuropathy. Clin Neurophysiol. 110:S265, 1999.
26. **Fisher, M.A.,** Wilson, J.R.: Asymmetric electrodiagnosis: findings in monoclonal gammopathy of uncertain significance. Muscle Nerve 22:1331, 1999.
27. **Fisher, M.A**., Wilson J. Fiber size injury in patients with monoclonal gammopathy of undetermined significance. Muscle Nerve 23:1625, 2000.
28. Chawla, J., Wilson, J., **Fisher, M.A**. Sensitivity and specificity of electrodiagnostic criteria for CIDP: comparison with diabetes and MGUS associated neuropathies. Neurology 60 (suppl 1), A488-489, 2003.
29. **Fisher, M.A.,** Naveed, S. Root mean square/turns analysis in the evaluation of patients with lumbar spinal stenosis. J Neurophys
30. Chawla, J., Wilson, J., **Fisher, M.A.** Potential value of electrodiagnostic algorithms for diagnosing neuropathies. Muscle Nerve suppl 12:S12, 2003
31. **Fisher, M.,** Langbein, W.E., Collins,E.G., Williams, K., Barder, L. Moderate exercise in the treatment of type II diabetic neuropathy. Muscle Nerve suppl 12:S15, 2003.
32. Chawla, J., **Fisher, M.A.,** Webber, C.L. Nonlinear recurrence analysis of sequential F-waves.  Muscle Nerve 30:523, 2004.
33. **Fisher, M.,** Zhu,J., Uddin, M., Grindstaff, P. Effect of stimulus intensity and rate on F-wave latencies. Clin Neurophysiol 117 (Suppl 1):165, 2006.
34. **Fisher,M.,** Zhu, J., Uddin, M., Grindstaff, P. Submaximal stimulation and F-wave parameters. Muscle Nerve 34:532, 2006.
35. Patel, A., **Fisher, M.A.** The natural history of MGUS associated neuropathy. J Peripher Nerv Syst 12 (Suppl):67, 2007.
36. Bajwa, R., **Fisher, M.A**. Traditional EDX and a mulitparameter technique in lumobsacral radiculopathies. J Clin Neurophysiology 24:480, 2007.
37. **Fisher, M.A.,** Venizelos, A.P.. Multifocal neuropathies and an ALS clinical presentation. J Peripher Nerv Syst 14:Suppl 2;49; 2009
38. Gordon, J., Patil, V., Keller, A, Webber, Jr., C.L., **Fisher,** **M.A.** Classification of F-waves by coupling principal component analysis with recurrence quantifications. J Clin Neurophysiol 27:83; 2010
39. Patil, V.K., Gordon, J., Keller, A., Webber, C.L., **Fisher, M.** Characterization of F-waves by recurrence quantification analysis. Muscle Nerve 42:684; 2010.
40. Gordon, J., Sinecore, J., **Fisher, M.**  Patterns of peripheral nerve dysfunction: insights from recursive partitioning.  J Clin Neurophysiol 28:95;2011.
41. Patil, V.K., Gordon, J., Crisan, E., **Fisher, M.,** Webber, C.L. Recurrence quantification of neurogenic abnormalities. J Clin Neurophysiol 28:427;2011.
42. Klein, C., Rymer, W., **Fisher, M.A.** Median motor axon properties are altered in chronic stroke survivors. J Clin Neurophysiol 30:F49; 2013.
43. Klein, C., Rymer, W., **Fisher, M.A.** Clinical, electrodiagnostic, and axonal channel correlations in patients with chronic strokes. Muscle Nerve 48:639;2013.

**DIDACTIC PRESENTATIONS WITH WRITTEN REVIEWS**

1. Fisher, M.A.: The use of H reflexes and F responses in

 radiculopathies. In: Electrodiagnostic Approach to Clinical Problems, Fourth Annual Continuing Education Course, AAEE, 1981, 13‑26.

1. Fisher, M.A.: Clinical Correlates of EMG. In: Current Clinical Neurology: A Comprehensive Review, Cook County Graduate School of Medicine, 1985, 10: 1‑15.
2. Fisher, M.A.: Brainstem disorders and cranial neuropathies.

In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l988, 6: 1-12,

1. Fisher, M.A.: H reflex and F-wave. In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l988, 8:1-14.
2. Fisher, M.A.: Motor neuron disease. In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l988, 12:1-6.
3. Fisher, M.A.: SFEMG: Physiology and clinical uses. In: Electromyography and Clincial Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School, l988. 20: 1-12.
4. Fisher, M.A.: Brainstem disorders and cranial neuropathies. In Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l989, 7:1-12; 1992, 15:1-13.
5. Fisher, M.A.: H reflex and F wave. In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l989, 9:l-14.
6. Fisher, M.A.: Motor neuron disease. In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l989, 18:1-16.
7. Fisher, M.A.: SFEMG: Stimulation techniques. In: Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l989, 23: 1-6.
8. Fisher, M.A.: Focal neuropathies of the lower limbs. In: Electromyography and Clinical Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School, l990, l0: l-8; 1991, 11:1-13; 1992, 13:1-14; 1993, 13:1-12.
9. Fisher, M.A.: H-reflex and F-wave. In: Electromyography and Clinical Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School, l990, 13: l-14, 1991,15:1-14; 1992, 17:l-15; 1993, 17:1-14.
10. Fisher, M.A.: Electrophysiologic evaluation of cranial nerves. In: Electromyography and Clinical Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School. 1993, 14:1-12; 1994, 21:1-20; 1997, 232:1-13.
11. Fisher, M.A.: Clinical and neuropathological aspects of diseases of peripheral nerves. Electromyography and Clinical Neurophysiology, University of Illinois at Chicago, 1992, 1993.
12. Fisher, M.A.: Clinical and neuropathological aspects of muscle disorders, Electromyography and Clinical Neurophysiology, University of Illinois at Chicago, 1992, 1993.
13. Fisher, M.A.: Physiology, pathophysiology, and clinical aspects of diseases of the neuromuscular junction. Electromyography and Clinical Neurophysiology, University of Illinois at Chicago, 1992, 1993.
14. Fisher, M.A.: Fundamentals of nerve conduction studies. In: Electromyography and Clinical Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School, 1994, 2:1-6.
15. Fisher, M.A.: Nerve conduction studies and the classification of nerve dysfunction: current concepts. Clinical Neurophysiology: a Focused Review and Recent Advances, 1994.
16. Fisher, M.A.: Critical appraisal of the use of F waves. Clinical EMG. American Academy of Neurology, 1994, 441:57-72.
17. Fisher, M.A.: The importance of a physiological approach to spasticity and some models. In: Assessment and Control of Spasticity in Upper Motor Neuron Disorders, Baylor College of Medicine, 1994.
18. Fisher, M.A.: Electrodiagnosis in the classification of nerve dysfunction; Late responses; Blink relfexes. In: Advances in EMG and Nerve Conduction Studies, FLENI and the Argentine Society if EEG and Clinical Neurophysiology, Buenos Aires, 1994.
19. Co-Director, Symposium "H Reflexes, F Waves, Silent Period and Blink Reflexes", X International Congress of EMG andClinical Neurophysiology, Kyoto, Japan, 1995
20. Fisher, M.A.: Single fiber EMG (SFEMG). In Electromyography and Clinical Neurophysiology: a High Intensity Review, RIC and Northwestern University Medical School, 1995, 19:1-10; 1996, 17:1-9.
21. Fisher, M.A.: Clinical and Neuropathological Aspects of More Common Diseases of Peripheral Nerves; Physiology, Pathophysiology, and Clinical Aspects of Diseases of Neuromuscular Junction. In: Electromyography and Clinical Neurophysiology, University of Illinois, 1995, 1996.
22. Fisher, M.A.: Electrophysiological quantification of spasticity - H reflexes and F waves. In Quantitative Assessment of Spasticity, American Academy of Physical Medicine and Rehabilitation, Chicago, 1996.
23. Fisher, M.A.: Cranial Nerves. In Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, l998, 25:1-12.
24. Fisher, M.A.: H-reflexes and F-waves. AACN Review Course, St. Petersburg, 2000; New Orleans, 2001, Sante Fe 2002, Boston, 2003, New Orleans 2004, Scottsale 2005.
25. Fisher, M.A. F Wave Study is Useful. In Debates in Electrodiagnostic Medicine, 48th Annual Meeting of the AAEM, Albuquerque, 2001, 11-15.
26. Fisher, M.A.: H Reflexes, F Waves, and A Waves. In Electromyography and Clinical Neurophysiology; a High Intensity Review, RIC and Northwestern University Medical School, 2002.
27. Fisher, M.A.: H reflexes in radiculopathies. In Physiological and Pathological Mechanism of the H Reflex (SIG).49th Annual Meeting of the AAEM, Toronto, 2002.
28. H Reflexes, F Waves, and A Waves. 18th Annual AACN Clinical Neurophysiology Review Course, Boston, February 12, 2003.
29. Fisher,M.A.: H-reflexes and F-waves. 20th Annual Clincial Neurophysiology Review Course, AACN, Scottsdale, 2/23/05.
30. Fisher, M.A.: H-reflexes, F-waves, and A-waves. 21st Annual AACN Clincal Neurophysiology Review Course. New Orleans. March 2, 2006
31. Fisher, M.A.: F-waves are underutilized in radiculopathies. CrossFire. Controversies in Neuromuscular and EDX Medicine. Anuual Meeting AANEM, October 12, 2006
32. Fisher, M.A.: H reflexes and F-waves; EDX Polyneuropathies, Annual Meeting of the American Clinical Neurophysiology Society, November 1, 2006
33. Fisher, M.A. H reflexes and F-waves. Annual Meeting of the American Clinical Neurophysiology Society,February 14, 2008.
34. Fisher, M.A. F-Waves: Methodology and Myth. Symposium F-Waves Revisited Annual Meeting American Clinical Neurophysiology Society, Savannah, 2008.
35. Director Symposium "F-waves Revisited", Annual Meeting American Clinical Neurophysiology Society, Savannah, 2008.
36. Fisher, M.A. F-Waves – Physiology and Clinical Uses. Annual Meeting American Association of Neuromuscular Medicine and Electrodiagnostic Medicine, Providence, 2008
37. Fisher, M.A. H reflexes and F-waves. Annual Meeting of the American Clinical Neurophysiology Society, Orlando, March 4, 2009.
38. Fisher, M.A. Chair, Symposium: Classification of Neuropathies including lecture “Electrodiagnostic Data and Neuropathic Classifications: Novel Approaches. Annual Meeting American Clinical Neurophysiology Society, Orlando, 2009.
39. Fisher MA. 21st International Congress of Clinical Neurophysiology, Puerto Vallarta, Mexico, May 19-22, 2010.

Radiculopathies-Plexopathies; Axonal/Demyelinating: Classification of Neuropathies; History of Modern Neurology in the United States

1. Director Special Interest Group Neuromuscular/EMG Annual American Clinical Neurophysiology Society, New Orleans, 2011.
2. Symposium Chair “New Techniques and Controversies in Electrodiagnosis” with lecture F-Waves: Mythology, Fact and the Future, Annual Meeting of the American Clinical Neurophysiology Society, San Antonio, 2012
3. Symposium Chair “Spasticity – What is it and What is the Electrophysiology?” with lecture “Spasticity – A Historical and Clinical Conundrum” Annual Meeting of the American Clinical Neurophysiology Society, Atlanta, 2014

**Miscellaneous Lectures:**

Departments of Anesthesiology, Orthopedics, Surgery and Rehabilitation Medicine, Michael Reese Hospital.

Department of Rehabilitation Medicine, Northwestern University (Chicago).

Department of Rehabilitation Medicine, Baylor University (Houston, Texas).

Research Conference, Department of Neurology, Billings Hospital, University of Chicago Pritzker School of Medicine.

Seminars American Academy Clinical Neurophysiology l987-l993.

Departments of Neurology, Neurosurgery, Psychiatry, Intensive Neuroscience Review. University of Illinois at Chicago.

Numerous lectures and Grand Rounds Michael Reese Hospital (Chicago), Loyola University Medical Center (Maywood, IL).

**LETTERS**

1. Fisher, M.A.: F waves: Comments on the central control of

recurrent discharges. Muscle and Nerve 2: 406, 1979.

1. Shahani, B.T., Young, R.R., Fisher, M.A.: H reflex Vibration Suppression. Arch Phys Med Rehab 324, 1979.
2. Fisher, M.A.: Reciprocal excitation of antagonistic muscles in "spasticity". Ann Neurol 14: 94‑95, 1983.
3. Fisher, M.A.: F waves. Muscle Nerve 8:71‑72, l985.
4. Fisher, M.A.: SSEP in lumbar radiculopathy. Neurology 40: 386-387, l990.
5. Fisher, M.A.: F waves and motor unit type. Muscle Nerve 16: 876, 1993.
6. Fisher, M.A.: Nerve conduction biopsy correlation in over 100 consecutive patients with suspected neuropathy. Muscle Nerve 18:1078-1079, 1995.
7. Fisher, M.A.: Are H reflexes and F responses equally sensitive to changes in motoneuronal excitability? Muscle Nerve 19:1345-1346, 1996.
8. Stubbs, E.B. Jr., Fisher, M.A., Wilson, J.R., Siegel, G. J.: High-titer immunoglobulin M antibody to nerve-specific class III tubulin in the serum of a patient with sensory demyelinating polyneuropathy. Muscle Nerve 19:1638-1639, 1996.
9. Fisher, M.A.: Dermatomal/segmental somatosensory evoked potential evaluation of L5/S1 unilateral/unilevel radicualpathies. Muscle Nerve 1997;20:392.
10. Fisher, M.A: F Waves - a Reply. Muscle Nerve 22:426-427, 1999.
11. Fisher, M.A.: Comments on Spine 2005:30:2667-76 in Spine 2006;31:1288.

**BOOK REVIEWS**

Postgraduate Medicine 79: 4l,44, l986.

Perspectives in Biology and Medicine 43:455-456, 2000.

New England Journal of Medicine 2003:349:512-513.

Clinical Neurophysiology 2004, 2005;116:986-987.

Clinical Neurophysiology 2006;117:2564-2565.

**CONFERENCES ATTENDED WITH**

**SCIENTIFIC PRESENTATIONS AND/OR INVITED PARTICIPANT**

American Academy of Neurology, Toronto, Canada, April 1976.

American Association of Electromyography and Electrodiagnosis,

San Diego, California, November 1976.

American Association of Electromyography and Electrodiagnosis,

Salt Lake City, Utah, September 1977.

International Congress of Electromyography and Electrodiagnosis, Amsterdam, September 1977.

American Academy of Neurology, Los Angeles, California,

April 1978.

American Association of Electromyography and Electrodiagnosis,

St. Louis, Missouri, October 1978.

Sixth International Congress of Electromyography, Stockholm,

Sweden, June 1979.

American Association of Electromyography and Electrodiagnosis,

Philadelphia, Pennsylvania 1980.

Computerized Electromyography, New York, New York 1981.

American Association of Electromyography and Electrodiagnosis,

Portland, Oregon 1981.

American Association of Electromyography and Electrodiagnosis,

St. Paul, Minnesota, 1982.

American Association of Electromyography and Electrodiagnosis,

Toronto, Canada, 1983.

American Academy of Neurology, Boston, Massachusetts, 1984.

American Association of Electromyography and Electrodiagnosis,

Kansas City, 1984.

American Association of Electromyography and Electrodiagnosis,

Las Vegas, 1985.

American Association of Electromyography and Electrodiagnosis,

Boston, l986.

American Academy of Clinical Neurophysiology, Boston, l987.

American Association of Electromyography and Electrodiagnosis,

San Antonio, l987.

American Academy of Neurology, Cincinnati, 1988.

American Academy of Clinical Neurophysiology, Boston, 1988.

American Association of Electromyography and Electrodiagnosis, San Diego, l988.

American Academy of Clinical Neurophysiology, Boston, l989.

American Association of Electromyography and Electrodiagnosis, Washington D.C., l989.

American Academy Clinical Neurophysiology, Boston, l990

American Society Clinical Evoked Potentials, Chicago, l990.

American Association of Electrodiagnostic Medicine, Chicago, 1990.

American Academy Clinical Neurophysiology, Boston, 1991.

American Asociation of Electrodiagnostic Medicine, Vancouver, 1991.

IX International Congress of Electromyography and Clinical Neurophysiology, Jeruselam, Israel, 1992.

American Academy of Clinical Neurophysiology, Chicago, 1992.

American Association of Electrodiagnostic Medicine, Charleston, 1992.

American Academy of Neurology, New York, 1993.

American Academy of Clinical Neurophysiology, San Francisco, 1993.

American Association of Electrodiagnostic Medicine, New Orleans, 1993.

American Academy of Neurology, Washington, D.C., 1994.

American Association of Electrodiagnostic Medicine, San Franciso, 1994.

American Academy of Clinical Neurophysiology, New York, 1995.

American Association of Electrodiagnostic Medicine, Montreal, Canada, 1995

X International Congress of EMG and Clinical Neurophysiology, Kyoto, Japan, 1995\*

American Academy of Clinical Neurophysiology, Chicago, 1996

American Academy of Physical Medicine and Rehabilitation, Chicago, 1996

American Association of Electrodiagnostic Medicine, San Deigo, 1997

American Academy of Clinical Neurophysiology, New Orleans, 1997

American Association of Electrodiagnostic Medicine, Orlando, 1998

American Academy of Clinical Neurophysiology, Sante Fe, 1999

Eleventh (XI)International Congress of EMG and Clinical Neurophysiology, Prague, 1999

American Association of Electrodiagnostic Medicine, Vancouver, 1999

American Academy of Clinical Neurophysiology, St. Petersburg, 2000 (Symposium Director: Electrophysiology of the Motor Unit)

52nd Annual Meeting of the American Academy of Neurology, San Diego, 2000

American Association of Electrodiagnostic Medicine, Philadelphia, 2000

American Association of Electrodiagnostic Medicine, Albuquerque, 2001

American Academy of Clinical Neurophysiology, New Orleans, 2002 (Symposium Director: Electrophysiology of Radiculopathies)

American Academy of Clinical Neurophysiology, Boston, 2003

American Association of Electrodiagnostic Medicine, San Franciso, 2003\*

American Academy of Clinical Neurophysiology, New Orleans, 2004

American Academy of Neurology, San Franciso, 2004

American Association of Electrodiagnostic Medicine, Savannah, 2004

American Academy of Clinical Neurophysiology, Scottsdale, 2005

American Academy of Clinical Neurophysiology, New Orleans, 2006

International Congress of Clinical Neurophysiology, Edinburgh, 2006

American Association of Neuromuscular Diseases and Electrodiagnostic Medicine, Washington,D.C. 2006

Annual Meeting American Clinical Neurophysiologic Society, Chicago, 2006

Biannual Meeting of the Peripheral Nerve Society, Snowbird, 2007

Annual Meeting American Clinical Neurophysiologic Society, Savannah, 2008

Annual Meeting American Association of Neuromuscular Medicine and Electrodiagnostic Medicine, Providence, 2008

Annual Courses and Meeting American Clinical Neurophysiology Society, Orlando, 2009

Biennial Meeting of the Peripheral Nerve Society, Wurzburg, Germany, 2009

International Congress of Gait and Mental Function, Washington D.C., 2010

Annual Meeting and Courses American Clinical Neurophysiologic Society, San Diego, 2010

Annual Meeting American Association of Neuromuscular Medicine and Electrodiagnostic Medicine, Quebec, 2010

Annual Meeting American Clinical Neurophysiology Society, New Orleans, 2011

Biennial Meeting of the Peripheral Nerve Society, Potomac MD, 2011

Annual meeting of the American Academy of Clinical Neurophysiology, San Antonio, 2012

Annual meeting American Academy of Clinical Neurophysiology Miami 2013

Annual meeting American Association Neuromuscular and Electrodiagnostic Medicine, San Antonio 2013

Annual meeting American Academy of Clinical Neurophysiology. Atlanta, 2014

Annual meeting American Academy of Clinical Neurophysiology. San Antonio, 2015

Annual meeting American Academy of Clinical Neurophysiology. San Orlando, 2016 **Robert S. Schwab Lifetime Achievement Award**

*The Schwab Award is presented annually to an individual who has made significant contributions in the area of clinical neurophysiology.*

**VIDEOTAPE**

H Reflexes and F Waves, AAEM 1987; revised 2006

**MISCELLANEOUS**

Interviewer, Yale College

 Harvard Medical School

 Loyola University Medical School

Director Ex Officio Harvard Club of Chicago 2017

**STATE MEDICAL LICENSES**

**Illinois**

**California (Inactive)**