

CURRICULUM VITAE

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RANK: Professor of Medicine (Neurology)
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CITIZENSHIP: Canadian
LANGUAGES SPOKEN: English, French, Hebrew

DEGREES: **B.Sc.** (1976)
University of Toronto (Science)
Hon. B.Sc. (1977)
University of Toronto (Zoology)
M.Sc. (1980)
University of Toronto (Molecular
neurochemistry)
M.D. (1983)
University of Toronto

**PROFESSIONAL
CERTIFICATION:** **F.R.C.P.(C)** (1987) (Neurology) #373306
C.S.P.Q. (1988) (Neurology) #12046

LICENSURE: Ontario (CPSO) #52527
Québec (CPMQ) #90009

PROFESSIONAL TRAINING:

Clinical

Sept 1980 - May 1982: Sunnybrook Medical Centre: Undergraduate Medical Student (years II & III).

Sept 1980 - May 1982: Mount Sinai Hospital: 1 day per week for the entire year plus the entire summer in: Clinical Neurology, (Elective).

Sept 1982 - Oct 1982: Institute of Neurology, The National Hospital, Queen Square (London, England): 2 month elective in Clinical Neurology.

June 1982 - June 1983: Mount Sinai Hospital: Clinical Clerkship.

June 1983 - June 1984: Sunnybrook Medical Centre: Straight internship in Internal Medicine.

July 1984 - Sept 1984: Toronto General Hospital: Resident in Neurology.

Oct 1984 - Dec 1984: Hospital for Sick Children: Resident in Pediatric Neurology.

Jan 1985 - June 1985: Wellesley Hospital: Senior Resident in Neurology.

July 1985 - Dec 1985: St. Michael's Hospital: Senior Resident in Neurology.

Jan 1986 - June 1986: St. Michael's Hospital: 1 day per week in: Multiple sclerosis assessment Clinic.

Jan 1986 - June 1986: Toronto Western Hospital: Resident in Neuropathology.

July 1986 - Dec 1986: Toronto General Hospital: Resident in Neurophysiology (EEG & evoked potentials); Resident in Chief, Dept. Neurology.

Jan 1986 - June 1987: Toronto Western Hospital: Senior Resident and Resident in Chief, Dept. Neurology.

Research

1977-1980: University of Toronto: Standard Biochemistry: Molecular Biochemistry, Neurochemistry; Electron Microscopy.

1980: Weizmann Institute of Science (Rehovot, Israel): Molecular Biology.

1981-82: Mount Sinai Hospital, Dept. Clinical Biochemistry: Enzyme Kinetics and Assays.

1982-83: Mount Sinai Hospital, Dept. Clinical Biochemistry, Surgical Oncology

1987-93: Montreal neurological Institute, McGill University, Dept. Neuro-immunology: The cellular mechanisms of immune-mediated demyelination as related to multiple sclerosis.

1993-: The Ottawa Hospital, General Site, Division of Neurology, University of Ottawa: Cellular mechanisms of immune-mediated damage in multiple sclerosis; the role of heat shock protein ?? T cell interactions.

ACADEMIC APPOINTMENTS:

- July 1990- June 1993: Assistant Professor, Department of Neurology and Neurosurgery, McGill University
- July 1992-June 1993: Cross appointment to department of Microbiology and Immunology McGill University
- July 1993-April 1995: Assistant Professor, Department of Medicine (Neurology), University of Ottawa
- May 1995-April 2000: Associate Professor, Department of Medicine (Neurology), University of Ottawa, Ottawa, Ontario

CURRENT POSITION:

- May 2000- : Professor, Department of Medicine (Neurology), University of Ottawa
- Nov. 1993- : Cross appointment to Department of Microbiology, Immunology and Biochemistry, University of Ottawa
- Aug. 1998- : Director, Multiple Sclerosis Research Clinic, The Ottawa Hospital, General Campus

HONOURS AND AWARDS:

- 1978: University of Toronto Open Master's Fellowship. Pure & Applied Science Research Grant. Dept. Zoology, University of Toronto)
- 1979: Pure & Applied Science Research Grant
Ontario Graduate Fellowship*
NSERC Post-Graduate Fellowship*
Addiction Research Foundation Research Scholarship*
- 1980: Walter F. Watkins Scholarship (U of T for honour standing in year I medicine)
- 1981: MRC Summer Research Scholarship
- 1986: St. Michael's Hospital, Toronto Clinical Research Prize
- 1987: MRC Research Fellowship
Multiple Sclerosis Society of Canada Research Fellowship. (Declined in favour of the MRC award)
- 1998: Recognition Award from the International Society for Neuroimmunology for contribution to the field

*These awards were regretfully declined in order to accept entrance into the Faculty of Medicine at the University of Toronto in the Fall of 1979.

HOSPITAL APPOINTMENTS:

- Jan. 1988-Dec. 1994: St. Vincent de Paul and Brockville General Hospital, Brockville Ontario, Consultant Neurologist
- Oct. 1988-present: Brockville Psychiatric Hospital, Brockville, Ontario: Staff Neurology Consultant; Head, EEG Department
- Mar. 1990-June 1993: Montreal Neurological Hospital and Institute: Staff Neurologist.

Mar. 1990-June 1993: Queen Elizabeth Hospital, Montréal: Staff Consultant Neurologist

Jan. 1991-June 1993: Director Clinical Neuroimmunology Laboratory, Montreal Neurological Hospital

July 1993-present: Staff Consultant Neurologist with cross appointment in Pathology and Laboratory Medicine, The Ottawa Hospital, General Site

April 1994-present: Royal Ottawa Hospital, Rehabilitation Centre, Consultant Neurologist

March 1995-present: Pembroke General Hospital, Consultant Neurologist

SCHOLARLY AND PROFESSIONAL ACTIVITIES:

Committees

- 1990-93: Member, Special Laboratories Committee, Montreal Neurological Hospital
- 1992-93: Member, Clinical Research Committee, Montreal Neurological Hospital
- 1993-99: Examiner, Medical Council of Canada
- 1995-: Member, OSAC Committee, Multiple Sclerosis Society of Canada
- 1995-: Member, Multiple Sclerosis Society of Canada, Research Grants Review Committee
- 1995-: Member, University of Ottawa Research Subcommittee
- 1997-: Member, Neurology Selection Committee
- 1999: Member of International Scientific Committee for 15th Congress of The European Committee for Treatment and Research in Multiple Sclerosis (ECTRIMS) and the 4th Annual Meeting of the America's Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS)
- 2000: Member of International Consensus Group for developing Treatment Guidelines for Multiple Sclerosis.
- 2000: Member Scientific Advisory for the Canadian Congress of Neurological Sciences
- 2001-: Member Medical Advisory Committee for the Canadian Multiple Sclerosis Society
- 2001-: Member of the America's Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) programming committee

Memberships

Fellow, Royal College of Physicians and Surgeons of Canada
Member, Federation of Medical Specialists of Quebec
Member, Ontario Medical Association
Member, Canadian Neurological Society
Associate member, American Academy of Neurology
Member, American Society for Neurological Investigation
Member, Clinical Immunology Society
Member, International Society for Neuroimmunology
Member, American Association of Immunologists

Organized Symposia

Montreal Neurological Institute symposium on "The matter of neurological disease: Idiopathic Parkinson's disease: the role of surgical transplantation", March 1993

Organizing and Scientific Advisory Committee member for the 1998 International Society for Neuroimmunology conference, Montréal, Québec

Organizer and lead contributor to the bi-annual one week MS Conference for visiting Italian Neurologists; Symposia held May, 1999; November, 1999; April, 2000 at the Ottawa Hospital-General Campus.

Organizing committee for the annual meeting of the Canadian Congress of Neurological Sciences conference, Ottawa, 2000.

Organized Multiple Sclerosis Satellite Symposium for the Canadian Congress of Neurological Sciences conference, Ottawa, 2000.

Organized Industry course for the Canadian Congress of Neurological Sciences conference, Ottawa, 2000.

Organized first Canadian Preceptorship Program for Canadian Neurologists, on behalf of the Canadian Network of MS Clinics, Ottawa, November, 2000.

Invited Lectures, Talks and Presentations

1. Corporation Des Physiothérapeutes du Québec Lecture series; "Management of Head Injury"; November, 1988.
2. Hôpital Notre Dame, Université de Montréal; "Interleukins"; May, 1989.
3. Corporation des Physiothérapeutes du Québec Lecture series; "Neurological Approach to Back Injuries"; November 1989.
4. Montreal Neurological Institute, McGill University, Grand Rounds; "Immunological Circuits in Multiple Sclerosis"; December, 1989.
5. Royal Victoria Hospital, McGill University, Resident Rounds; ".An assessment of Lower Back pain", May 1990.
6. Corporation des Physiothérapeutes du Québec Lecture series; "Management of Head Injury", November 1990.
7. Montreal Neurological Institute, McGill University, Neuroscience Conference; "The Role of Heat Shock Proteins and ?? T Cells in Multiple Sclerosis"; February, 1991.
8. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Multiple Sclerosis"; February, 1991.
9. St. Michael's Hospital, University of Toronto, Medical Grand Rounds; "Role of ?? T Cells and Heat Shock Proteins in Multiple Sclerosis"; May, 1991.
10. Health Sciences Centre, University of Manitoba, Immunology Seminar; "Role of ?? T Cells and Heat Shock Proteins in Multiple Sclerosis"; August, 1991.
11. Leeds-Grenville Medical Community, Brockville, Ontario; "New Concepts in the Management of Parkinson's Disease"; October, 1991.
12. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Approach to the Management of the First Seizure"; September, 1991.

13. Guest expert on "Visa Santé", a Québec television health program on Multiple Sclerosis; October, 1991.
14. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Anti-Phospholipid Antibodies and Neurological Disease"; December, 1991.
15. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Diagnosis and Management of Parkinson's Disease"; February, 1992.
16. Queen Elizabeth Hospital, Department of Medicine, Special Lecture; Au Vieux St. Gabriel, Montreal; "New Advances in Stroke Management"; February, 1992.
17. Ste. Anne de Bellevue VA Hospital, Medical Grand Rounds; "New Concepts of Stroke Management"; March, 1992.
18. Leeds-Grenville Medical Community, Brockville, Ontario; "New Advances in Stroke Management"; April, 1992.
19. Hôpital Notre Dame, Université de Montréal; "New Strategies in the Management of Multiple Sclerosis: Potential Role of TNF"; May, 1992.
20. St. John Medical Society, St. John, N.B.; "New Approaches to the Management of Parkinson's Disease"; May, 1992.
21. Calgary General Hospital, University of Calgary, City-Wide Neurology Rounds; "Immunopathogenesis of Multiple Sclerosis"; June, 1992.
22. Department of Immunology Seminar, University of Calgary; "Immunopathogenesis of Multiple Sclerosis"; June, 1992.
23. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Neurological Emergencies"; August, 1992.
24. University Hospital, University of Colorado School of Medicine, Neurology-Neurosurgery "Grand Rounds"; "New Concepts in the Immunopathogenesis of MS"; September, 1992.
25. Ottawa General Hospital, University of Ottawa, Neuroradiology/Neurology/Neurosurgery Rounds; "New Concepts in the Immunopathogenesis of Multiple Sclerosis"; September, 1992.
26. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Diagnosis and Management of Headache"; October, 1992.
27. Lakeshore General Hospital, Pointe-Claire, Quebec; "The Role of DHE in the Treatment of Migraine"; November, 1992.
28. Royal Victoria Hospital and Jewish General Hospital Combined Resident Special Lecture; "New Advances in Stroke Management"; November, 1992.

29. Guest expert on "Medically Speaking", a PBS television health program on Multiple Sclerosis; November, 1992.
30. Queen Elizabeth Hospital, McGill University, Medical Grand Rounds; "Neurosarcoidosis"; March, 1993.
31. Workshop participant on heat shock/stress proteins in multiple sclerosis and other disorders, sponsored by the National (US) MS Society; "MHC unrestricted killing of oligodendrocytes by T-?? cells", La Toja, Galicia, Spain; April 2-6, 1993.
32. Course Lecturer, "The Immunology of Multiple Sclerosis", Canadian Congress of Neurological Sciences, Toronto, June, 1993.
33. MS Society Local Chapter, Pembroke, Ontario, Interferon-? and the treatment of Multiple Sclerosis", September, 1993.
34. MS Society, Ottawa/Carleton Chapter, Annual General Meeting, Ottawa, Ontario. "Treatment of Multiple Sclerosis", October, 1993.
35. Ottawa Civic Hospital, University of Ottawa, Neurology and Rehabilitation Medicine for Family Practitioners. "Multiple Sclerosis- New Theories, New Therapies" November, 1993.
36. Ottawa General Hospital, Neurology Grand Rounds. "M.S.: Interfering with Interferons and other New Strategies", January, 1994.
37. Health & Welfare Canada, Tunney's Pasture. "Disability due to Demyelinating Disorders (MS)", February, 1994.
38. Leeds Grenville Medical Society, Brigadoon restaurant. "Multiple Headache Disorder", February, 1994.
39. Neurology Update 1994, Ottawa Congress Centre. "New Hope for M.S. Patients", April, 1994.
40. Ottawa General Hospital Annual Research Day. "Cerebral Spinal Fluid Analysis in Multiple Sclerosis", April, 1994.
41. Westin Hotel, "New trials using ?-interferon in the treatment of MS", April, 1994.
42. Ottawa General Hospital, Educational evening for newly diagnosed MS patients, April, 1994.
43. Grand Rounds, Brockville General Hospital, "Update on Stroke Prevention", May, 1994.
44. The Rehabilitation Centre, Royal Ottawa Hospital, Physiotherapy Departmental Rounds, "The use of cyclophosphamide in the management of Multiple Sclerosis", August, 1994.

45. Ottawa General Hospital, Guest Speaker for the Canadian Association of Neuroscience Nurses, "Innovations in neurosciences: Use of cyclophosphamide in the treatment of multiple sclerosis", October, 1994.
46. Chelsea Inn, Toronto; Main speaker for the medical update session, Multiple Sclerosis Society of Canada, annual general meeting, "New strategies in the treatment of multiple sclerosis", November, 1994.
47. Ottawa General Hospital, Grand Rounds, Department of Medicine, "When the heat is on, 007 cells may not come to the rescue; A story in the cold war against MS", May, 1995.
48. Best Western "Heritage Inn", Pembroke, Ontario, "Medication induced headache: Strategies for diagnosis and management", May, 1995.
49. Ottawa Congress Centre, "Cerebrospinal fluid analysis: What can we learn from the brain's soup?", Canadian Society of Laboratory Technologists Congress, June 1995.
50. Victoria Congress Centre, "Immunologic Manipulation in Multiple Sclerosis", Neurobiology Review Course, XXXth Canadian Congress of Neurological Sciences, June, 1995.
51. Ottawa General Hospital, Neurology Grand Rounds, "MRI in the Diagnosis and Management of MS", September, 1995.
52. Holiday Inn, Sudbury, Ontario, Northern Education Conference, "Immune Directed Therapies in the Treatment of Multiple Sclerosis", October, 1995.
53. Tom Brown Arena, Ottawa, Ontario, Annual General Meeting of local MS Chapter, "New and Upcoming Treatments for multiple sclerosis", October, 1995.
54. Royal Ottawa Hospital, Rehabilitation Centre, "Pathophysiology of Multiple Sclerosis", December, 1995.
55. Ottawa Civic Hospital, Neurology Grand Rounds, "Role of γ -interferon in the Management of MS", December, 1995.
56. Ottawa General Hospital, Nursing and Paramedical Care "In Service", γ -Interferon: First of a New Kind of Therapy", December, 1995.
57. Royal Ottawa Rehabilitation Centre, "Advances in the Understanding and Treatment of MS", May, 1996.
58. The Canadian Society for The Weizmann Institute of Science, Ottawa Chapter, "Promising New Treatments for Multiple Sclerosis", May, 1996.
59. Jewish General Hospital, Montreal, Quebec, Grand Rounds on "Advances in the Treatment of MS", September, 1996.
60. Mississauga General Hospital, Mississauga, Ontario, Neuroscience Rounds on "Rationale for New Treatments in MS", October, 1996.

61. Royal Brock Hotel, Brockville, Ontario, "Health Professional Education Day", MS Society of Canada, Ontario Division, Eastern Region. Keynote speaker on (MS) "Symptom management and research update", October, 1996.
62. Health Sciences Centre, Winnipeg, Manitoba, Neuroscience Rounds, "Rationale for New Therapies in MS, October, 1996.
63. Eldorado Hotel, Kelowna, B.C., Neurology Review on "Advances in the Treatment of MS", November, 1996.
64. Maison de Gouverneurs, Montréal, Québec, Special evening lecture on "Immunological basis for treatment of MS", November, 1996.
65. Ottawa Civic Hospital, Neurology Grand Rounds on "MRI and MS", December, 1996.
66. Ottawa General Hospital, Neurology Grand Rounds on: "Magnetic Resonance Imaging: What's the Attraction to MS"? January, 1997.
67. Ottawa Congress Centre, Ottawa Valley Drug Information Service Update on: "Advances in Multiple Sclerosis, March, 1997.
68. Michelangelo's, Quebec City, Neurology update on "Rationale for rational therapy in MS", March, 1997.
69. Ottawa General Hospital, Neurology Grand Rounds on: "Blasting away at MS: Is it time for the big guns?" April, 1997.
70. Ottawa Civic Hospital, 46th Annual Refresher Course for Family Practitioners, "What's new in multiple sclerosis?", April, 1997.
71. Hotel Lac Carling, Pine Hill, Quebec, MS: Clinical issues and decisions, "Immunopathogenesis of MS", June, 1997.
72. Canadian Congress of Neurological Sciences, Sheraton Hotel, Saskatoon, Saskatchewan, MS satellite symposium, "MRI as an outcome measure", June, 1997.
73. Canadian Congress of Neurological Sciences, Sheraton Hotel, Saskatoon, Saskatchewan, MS satellite symposium, "Immune mechanisms of treatment", June, 1997.
74. Waterfront Centre Hotel, Vancouver, British Columbia. Special symposium on Multiple Sclerosis: Clinical Issues & Decisions, "Immunopathogenesis of MS", October, 1997.
75. Sheraton Harbor Hotel & Marina, San Diego, Ca. Annual meeting of the International Society for Interferon and Cytokine Research, Guest speaker for a symposium on Interferon and Multiple Sclerosis, "?-interferon-1a treatment of multiple sclerosis: results of a clinical trial using Rebif? in relapsing-remitting disease", October, 1997.
76. Camberley Club Hotel, Toronto. Meeting of TEVA Advisory Board. "Mechanism of Copolymer-1 in Multiple Sclerosis", November, 1997.

77. Treatment Advances in Immunology Symposium, Tampa, Florida; “Immunological Mechanism of Copaxone”, February, 1998.
78. Multiple Sclerosis...an Update: “What’s wrong with the myelin in multiple sclerosis?”, Sheraton Gateway Hotel, Toronto. Guest speaker for the Association of Community Neurologists, February, 1998.
79. “Immunological Rationale for MS Therapy: What, How, Who and When?”, Community Neurologists, Le Latini Restaurant, Montreal, Quebec; March, 1998.
80. Charles-Lemoyne Hospital, Greenfield Park, Quebec, Neurology Grand Rounds “Immunological Rationale for MS Therapy: What, How, Who and When?” March, 1998.
81. Corel Centre, Kanata, Ontario, Teva-Marion Partners Symposium. Lecture on “Copaxone: Mechanism of Action in MS”, March, 1998.
82. Place Bonaventure, Montreal, Quebec. Canadian Congress of Neurological Sciences, Neurobiology Review Course: “The Immunology of MS Lesion Generation”, June, 1998.
83. Marriott Chateau Champlain, Montreal, Quebec. Continuing Medical Education Seminar, Multiple Sclerosis, An Update for Nurses: “The Immunology of MS: From Chaos to Clarity”, June, 1998.
84. Universidad Internacional Menéndez Pelayo, Santander, Spain. La Destruccion de la mielina y su reparacion: nuevas terapéuticas. Interferones: Interferon beta-1a (Rebif[®]), June, 1998.
85. El Dorado Hotel, Santa Fe, New Mexico. Southwest Teva Advisory Board Meeting, “Mechanism of Action of Copaxone”, July, 1998.
86. Aronsborg Conference Centre, Balsta, Sweden. Presentation of “Proposed mechanism of action of Copaxone” to international roundtable conference. September, 1998.
87. ECTRIMS Satellite Symposium, Stockholm Conference Centre, Stockholm, Sweden. “Mechanism of Action of Copaxone in Multiple Sclerosis”. September, 1998.
88. Drug Information Association International Workshop on Bioequivalence or Biocomparability of Complex Molecules, Sheraton Centre Hotel, Toronto, Ontario, “Interferon beta therapy in multiple sclerosis: A clinician’s perspective”. September, 1998.
89. Royal University Hospital, University of Saskatoon, Saskatoon, Saskatchewan, “Immunologic Perspectives, Pathology, Diagnosis and Prevalence of MS” in symposium on “Management of MS in the Era of Immunotherapy”, October, 1998.
90. Sheraton Halifax Hotel, Halifax, Nova Scotia, “Current Thoughts on Treatment of MS”, October, 1998.
91. Dalhousie University Neuroscience Rounds, Halifax, Nova Scotia, “Mechanism of Action of Copaxone”. October, 1998.

92. Hotel Intercontinental, Montreal, Quebec, Nurses Forum on "Management of MS in the Era of Immunotherapy": "New Options in the Management of MS" and "Advances in the Treatment of Secondary Progressive MS". October, 1998.
93. Therapeutics program, Health Canada, Banting building, Ottawa, Ontario: "A physician's perspective of what to look for in an interferon- γ product for multiple sclerosis". November, 1998.
94. The Living Arts Centre, Bank of Montreal Room, Mississauga, Ontario: "The current role of Rebif in the management of MS: Results of the PRISMS study and beyond". November, 1998.
95. Sault Ste. Marie Annual Clinical Day, Water Tower Inn, Sault Ste. Marie, Ontario. Plenary session: "1998 Update on Multiple Sclerosis", November, 1998.
96. Second Annual Montreal Neurology Symposium, Hopital Notre-Dame, Montreal, Quebec. Multiple Sclerosis Symposium: "Immunopathogenesis" and "Disease Modifying Therapies, Special Role in Transitional MS". November, 1998.
97. Neurology Rounds at Jewish General Hospital, Montreal, Quebec. "Advances in the treatment of Secondary Progressive Multiple Sclerosis", January, 1999.
98. Hotel Sofitel, Paris, France. Multiple Sclerosis (MS) Frontiers: Symposium on Copaxone-New Developments. "Mechanism of Action of Copaxone", January, 1999.
99. American Academy of Neurology, Toronto, Ontario. Guest Faculty for course No. 7AC.008 on Immunosuppressive Treatment for Neurologists: Lecture entitled "Multiple Sclerosis: Further Therapies, May, 1999.
100. Dubrovnik restaurant, Winnipeg, Manitoba. "Multiple Sclerosis-The Basics", May, 1999.
101. Health Sciences Centre, University of Manitoba, Winnipeg, Manitoba. "Multiple Sclerosis-What, Why, Who & When", May, 1999.
102. The Deerhurst, Huntsville, Ontario. Lecture on "Mechanism of Action of Copaxone in MS & The Newer Therapies". Part of a Symposium on "MS Now a Treatable Disease".
103. The Provincial Museum of Alberta, Edmonton, Alberta; special lecture in conjunction with the CCNS. "Results of the Rebif Secondary Progressive Study, June, 1999.
104. Janet Lynn's Bistro, Waterloo, Ontario. "Multiple Sclerosis-What, Why, Who & When", June, 1999.
105. "Lights and Lesions" aboard the Mariposa Belle in Toronto Harbour. A discussion of pertinent management points in the use of Copaxone in treating MS patients. June, 1999.
106. Chateau Mt. Tremblant, Mt. Tremblant, Quebec. Lecture on "MS: Newer therapies and their immunological rationale"; part of a Symposium on "Prise en charge de la SEP au temps de l'immunothérapie". June, 1999.

107. Courtyard restaurant, Ottawa, Ontario. "The current role of Rebif in the Management of MS: The results of PRISMS, OWIMS & SPECTRIMS Trials. August, 1999.
108. Muskoka Sands Resort, Gravenhurst, Ontario. Lecture on "MS: Newer therapies and their immunological rationale"; part of a Symposium on "Management of MS in the era of immunotherapy". August, 1999.
109. Maverick's Restaurant, Moncton, N.B. Lecture on "Rationale for Immunotherapy in Multiple Sclerosis-What, Why, Who & When; August, 1999.
110. Hilton Hotel, St. John, N.B. Lecture on "Rationale for Immunotherapy in Multiple Sclerosis-What, Why, Who & When; August, 1999.
111. Guest speaker of the Polish Neurological Society Meeting, Lublin, Poland. "The role of Interferon γ -1a (Rebif) in the management of MS". August, 1999.
112. Newfoundland Education Day, Memorial University of Newfoundland, St. John's, Nfld. 3 Lectures: "Diagnosis and Differential, Use of MRI"; Rationale for Immunotherapy, Pathogenesis, MOA's" and "Current Therapy Choices". October, 1999.
113. Xth Pan American Congress of Neurology, Cartagena, Columbia. 2 Lectures: "Immune Mechanisms in Multiple Sclerosis", and "Overview of γ -interferon-1a (Rebif) in the treatment of Multiple Sclerosis". October, 1999.
114. The Victoria Conference Centre, Victoria B.C. Lecture on "Immunological Basis for the Treatment of MS" as part of a symposium of the on "Management of MS in the era of Immunotherapy". October, 1999.
115. Delta Chelsea Hotel, Toronto. Address to the Ontario Division of the Multiple Sclerosis Society of Canada at their Annual General Meeting entitled "MS: A millennium of research". November, 1999.
116. Park Hyatt Hotel, Toronto. Lecture on "Neuroimmunological rationale for interferon therapy" as part of a symposium entitled "MS: Inside and Out", in which I was also the Chairman. November, 1999.
117. Corel Centre, Kanata. Lecture on "The New MS Drugs" at the Collaborative Educational Session of the Ottawa-Carleton MS Chapter and the MS Clinic of the Ottawa Hospital-General Campus. November, 1999.
118. Holiday Inn, Minneapolis, Minnesota. Lecture on "The role of Glatiramer Acetate in the Treatment of Relapsing-Remitting MS". December, 1999.
119. Inselspital, Hopital de L'Ile, Berne, Switzerland. "Dose and Timing of Interferon Therapy", in the second annual 'State of the Art Symposium' on the Diagnosis and Therapy of Multiple Sclerosis. January, 2000.
120. Chateau Laurier Hotel, Ottawa Canada. "New Approach to Secondary Progressive MS" in a Conference and Workshop in Multiple Sclerosis. February, 2000.

121. Associacao Nacional de Jovens Empresarios, Porto, Portugal. "Dose and Timing of Interferon Therapy". In Simposio Novos Avancos Na Esclerose Multipla. February, 2000.
122. Presentation of the 4 year PRISMS Study results at the 2000 Charcot Foundation Meeting, Hotel Beau Rivage, Lausanne, Switzerland. March, 2000.
123. Lecture at the Ostsee-Symposium, Klinische Neuroimmunologie, "Experiences with long-term immunomodulatory therapy of multiple sclerosis. Rostock-Warnemünde, May, 2000.
124. American Academy of Neurology, San Diego, Ca. Guest Faculty for course No. 7AC.008 on Immunosuppressive Treatment for Neurologists: Lecture entitled "Multiple Sclerosis: Current Therapy", May, 2000.
125. Lecture entitled "Immunology Update" at Symposium "Treating MS-An update for clinical practitioners". Rocky Crest Golf Resort, Mactier, Ontario. June, 2000.
126. Presentation of the "PRISMS 4 Year results" at the Serono Symposium, European Neurological Society Meeting, Jerusalem Convention Centre. Jerusalem, Israel, June, 2000.
127. Presentation at Physician Educational Program of "Multiple Sclerosis: Recent Advances & Current Opinion", The American Club, Kohler, Wisconsin. July, 2000.
128. Lecture in Symposium entitled Multiple Sclerosis: "Relapsing MS", Managing the Continuum; The 2000 Lecture Series. "Relapsing MS and the disease continuum: addressing early and aggressive treatment and therapeutic options: the disease modifying drugs". The Royal Canadian Lodge, Banff, Alberta, August, 2000.
129. Guest Speaker at the Ottawa-Carleton chapter of the MS Society of Canada's Annual General Meeting on "Research update in MS", October, 2000.
130. Presentation of the "PRISMS 4 Year results and "the role for immunomodulatory agents" at LACTRIMS, Buenos Aires; November, 2000.
131. Presentation of the "PRISMS 4 Year results" at the Mexican Neurological Society Meeting, Acapulco, Mexico; November, 2000.
132. Grand Rounds, University of Calgary, Foothills Hospital on "The Rationale for Bone Marrow Transplantation in MS", December, 2000.

Other Activities

Ad Hoc Reviewer: "Neurology"
"Experimental and Molecular Pathology"

“Clinical and Investigative Medicine”
“Journal of Neuroimmunology”
“Experimental Cell Research”

Grant Reviewer: Medical Research Council of Canada
Multiple Sclerosis Society of Canada
Physicians’ Services Incorporated of Ontario

Physician Examiner: Medical Council of Canada (1994-98)

BASIC RESEARCH FUNDING:

- 1990-92: "Cellular basis of immune regulation in multiple sclerosis", \$123,000. (Multiple Sclerosis Society of Canada)
- 1991-92: "Regulatory effects of Betaseron[?] Interferon- γ (IFN- γ) on the growth and activity of human $\alpha\beta$ T cells", \$63,488 US. (Berlex Laboratories)
- 1993-: "Canadian Collaborative Genetics Project in MS", Co-Investigator. (Estimated budget \$5,000,000) (Multiple Sclerosis Society of Canada)
- 1993-95: "The mechanism of $\alpha\beta$ T-cell induced brain injury: relevance to MS", \$125,000. (Multiple Sclerosis Society of Canada)
- 1993-94: "The potential regulatory role of Betaseron[?] Interferon- γ (IFN- γ) in $\alpha\beta$ T cell interactions", \$72,000 US. (Berlex Biotechnology Laboratories)
- 1994-96: "The role of Rebif[?] in controlling suppressor cell function and inducing lymphocytic apoptosis in Multiple Sclerosis", \$33,500 (Ares-Serono, Switzerland)
- 1995-97: " $\alpha\beta$ T cell heat shock protein Interactions in Multiple Sclerosis", \$128,000. (Multiple Sclerosis Society of Canada)
- 1997-99: "The generation, immortalization and characterization of MS $\alpha\beta$ T cells", \$120,000. (Multiple Sclerosis Society of Canada)
- 1997-99: "Establishing and understanding CD28/B7 interactions in MS disease: \$160,000, (Multiple Sclerosis Society of Canada)
- 1999-02: "Role of $\alpha\beta$ T cells in Multiple Sclerosis Immunopathogenesis: Investigation of Regulatory Properties, \$291,789 (Multiple Sclerosis Society of Canada)
- 1999-00: " $\alpha\beta$ T cells in MS: Correlation of Cytokine Profiles and Perforin Molecules with Disease Activity and Modulation by Interferon- γ 1a (AVONEXTM) Therapy. \$125,625 (Biogen Canada)
- 2000-2005: "Multiple Sclerosis as an Autoimmune Disease. Treatment of poor prognosis patients with Multiple Sclerosis using intensive immunoablative therapy followed by immune cell depleted autologous stem cell

transplantation (ASCT).” \$4,500,000 (Multiple Sclerosis Society of Canada).

2000-2001: “Systematic Reviews of the Efficacy and Safety of Four Medical Uses of Marijuana”. \$202,698. (Medical Research Council of Canada).

CLINICAL RESEARCH FUNDING:

- 1994-96: “A double blind placebo controlled multi-centre study of oral myelin in the treatment of early relapsing-remitting multiple sclerosis”, AutoImmune Inc.
- 1994- : “A multi-centre, randomized double-blind, placebo controlled, phase III study of subcutaneous Rebif? (recombinant-human interferon-beta) in the treatment of relapsing-remitting multiple sclerosis”, ARES-SERONO, Switzerland
- 1994- : “A multi-centre, randomized double-blind, placebo controlled, phase III study of subcutaneous Rebif? (recombinant-human interferon-beta) in the treatment of relapsing-secondary-progressive multiple sclerosis”, ARES-SERONO, Switzerland
- 1995- : “A multi-centre, randomised, double-blind, placebo-controlled study of Rebif? (recombinant-human interferon-beta) in patients with relapsing multiple sclerosis”, ARES-SERONO, Switzerland
- 1995-96: “Multiple Sclerosis burden of illness study in Canada”, Berlex Canada Inc.
- 1996-98: “Double-blind, randomized, placebo-controlled, parallel group study of safety and efficacy of Ro 45-2081 in patients with relapsing-remitting multiple sclerosis”, Hoffman-La Roche Limited
- 1996- : “A randomised, double-blind, placebo-controlled study of Avonex™ (Interferon? -1a) in the treatment of subjects as high risk for development of multiple sclerosis following the first onset of an isolated demyelinating event,” Biogen Medical Research Department, USA
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