CURRICULUM VITAE

NAME: Albert John Petkau

DATE OF BIRTH: May 12, 1950

PLACE OF BIRTH: Carman, Manitoba, CANADA

CITIZENSHIP: Canadian

EDUCATION:

1. University of Manitoba: September 1967 - April 1971
   Double honors in Mathematics and Statistics
   Degree: B.Sc. (Hons.), May 1971

2. Stanford University: September 1971 - December 1974
   Doctoral program in Department of Statistics
   Degree: Ph.D., August 1975

EMPLOYMENT RECORD:

1974-1976	Instructor, Mathematics, MIT
1976-1981	Assistant Professor, Mathematics, UBC
1981-1983	Associate Professor, Mathematics, UBC
1983-1986	Associate Professor, Statistics, UBC
1986-2019	Professor, Statistics, UBC
1989-1994	Head, Department of Statistics, UBC
2002-2003	Acting Head, Department of Statistics, UBC
July 1, 2019-	Professor Emeritus, Statistics, UBC

Visiting Appointments:

Summer 1977	Statistics, Stanford
Summer 1978	Mathematics, MIT
Summer 1979	Mathematics, MIT
Summer 1981	Statistics Centre, MIT
1981-1982	Biostatistics, Harvard School of Public Health, Boston
1981-1982	Statistical Consultant, Massachusetts General Hospital, Boston
1986-1987	Mathematics, University of Sussex, Brighton, England
September 1987	Statistics, Australian National University, Canberra, Australia
Summer 1991	Mathematical Statistics, Charles University, Prague, Czechoslovakia
1994-1995	Statistics, University of Auckland, Auckland, New Zealand
April - July 2004	Sylvia Lawry Centre for Multiple Sclerosis Research, Munich, Germany
2007-2008	Finance and Applied Statistics, Australian National University, Canberra

PROFESSIONAL MEMBERSHIPS:

American Statistical Association
Institute of Mathematical Statistics
International Biometric Society
International Environmetrics Society
International Statistical Institute (Elected member: 1988)
Statistical Society of Canada

PROFESSIONAL INTERESTS:

Areas: sequential analysis, Bayes sequential decision problems (including numerical methods), longitudinal data, biostatistics, environmetrics.

Applications: design and analysis for clinical trials, sequential and group sequential methods in clinical trials, air pollution and human health, multiple sclerosis, general statistical consultation and collaboration.

SUPERVISION OF GRADUATE STUDENTS:

A. Students Supervised:

1. Harry S.W. Joe (1979). M.Sc. (Mathematics). Comparison of procedures for testing the equality of survival distributions. Winner: 1979 Schwarz Prize.
2. Edgar Avelino (1984). M.Sc. (Statistics). The index of dispersion.
3. Vivien Freund (1984). M.Sc. (Mathematics). Survival and growth curve analyses applied to a barnacle data set.
4. Nhu Le (1986). M.Sc. (Statistics). The statistical analysis of the spatial and temporal structure of pH measurements. Winner: 1986 Schwarz Prize.
5. Randy Sitter (1986). M.Sc. (Statistics). The design of quantal response experiments and the modelling of quantal response experiments over time.
6. Andrew Coldman (1987). Ph.D. (Statistics). The development of resistance to anticancer agents. Winner: Pierre Robillard Award for 1988.
7. Janis Chang (1988). M.Sc. (Statistics). Analysis of ordered categorical data. Jointly with Nancy Heckman.
8. Bing Li (1989). M.Sc. (Statistics). The relationship between asthma and pollution levels in Prince George, British Columbia.
9. Mark Irwin (1989). M.Sc. (Statistics). Empiric risk estimation in Alzheimer disease.
10. Karim Ladak (1990). M.Sc. (Statistics). Re-sampling based variance estimators in ratio estimation with application to weigh scaling. Jointly with M. Delampady.
11. Jinko Graham (1991). M.Sc. (Statistics). Longitudinal analysis for binary and count data.
12. Brad McNeney (1992). M.Sc. (Statistics). Overdispersion in Poisson regression.
13. Rhonda Rosychuk (1994). M.Sc. (Statistics). Cancer cluster detection in B.C. school districts. Jointly with N. Le.
14. Yulia D'yachkova (1997). M.Sc. (Statistics). Analysis of longitudinal data from the Betaseron multiple sclerosis clinical trial.
15. Daphne Guh (1997). M.Sc. (Statistics). Procedures for multiple outcome measures with applications to multiple sclerosis trials.
16. Alex Smith (1999). M.Sc. (Statistics). Design strategies for repeated MRI scanning in multiple sclerosis clinical trials. Winner: 1999 Marshall Prize.
17. Jochen Brumm (2000). M.Sc. (Statistics). Models for two-state disease processes with applications to relapsing-remitting multiple sclerosis.
18. Lee Er (2001). M.Sc. (Statistics). Assessing informative drop-out in models for repeated binary data.
19. Rachel MacKay (2003). Ph.D. (Statistics). Hidden Markov models: multiple processes and model selection. Winner: 2002 Marshall Prize, 2004 Pierre Robillard Award.

20. Lindsey Turner (2003). M.Sc. (Statistics). Longitudinal analyses of long-term frequent magnetic resonance imaging outcomes in the PRISMS multiple sclerosis clinical trial.
21. Lei (Helen) Han (2003). M.Sc. (Statistics). Longitudinal analyses for ordinal extended disability status scale scores from the Betaseron multiple sclerosis clinical trial.
22. Jesse Raffa (2006). M.Sc. (Statistics). Longitudinal analyses of medication adherence data in HIV-infected illicit drug users. Jointly with B. Conway (Department of Anesthesiology, Pharmacology and Therapeutics, UBC).
23. Kimberly Fernandes (2007). M.Sc. (Statistics). Design and analysis of cluster-randomized clinical trials. Jointly with P. Brasher.
24. Shuyu Fan (2008). M.Sc. (Statistics). A robust GEE approach for the PRISMS clinical trial MRI data.
25. Shing (Eric) Fu (2010). M.Sc. (Statistics). Regression approaches to estimation of relative risk: Application to multiple sclerosis studies. Winner: 2010 Marshall Prize.
26. Corinne Riddell (2011). M.Sc. (Statistics). An adaptive clinical trial design for a sensitive subgroup examined in the multiple sclerosis context. Jointly with Y. Zhao (MS/MRI Research Group, UBC). Winner: 2011 Marshall Prize.
27. Jun (Jason) Chen (2011). M.Sc. (Statistics). Statistical efficiency of phase II multiple sclerosis clinical trials with different MRI scanning frequencies. Jointly with Y. Zhao (MS/MRI Research Group, UBC).
28. Lang (Sirius) Qin (2011). M.Sc. (Statistics). Magnetic resonance imaging lesion count as a surrogate endpoint in relapsing-remitting multiple sclerosis clinical trials.
29. Feng Zhu (2011). M.Sc. (Statistics). Evaluation of analysis approaches to longitudinal ordinal responses in multiple sclerosis clinical trials.
30. Ardavan Saeedi (2012). M.Sc. (Statistics). Nonparametric Bayesian models for Markov jump processes. Jointly with A. Bouchard-Côté. Winner: 2012 Marshall Prize.
31. Meijiao Guan (2012). M.Sc. (Statistics). Incorporating prior information into an approach for detecting unusually large increases in MRI activity in multiple sclerosis patients. Jointly with Y. Zhao (MS/MRI Research Group, UBC).
32. Mohammad Mahsin (2014). M.Sc. (Statistics). Determination of sample sizes for Phase II clinical trials in multiple sclerosis using lesional recovery as an outcome measure. Jointly with Y. Zhao (MS/MRI Research Group, UBC).
33. Mohammad Ehsanul Karim (2015). Ph.D. (Statistics). Causal inference approaches for dealing with time-dependent confounding in longitudinal studies, with applications to multiple sclerosis research. Jointly with P. Gustafson.
34. Yumi Kondo (2016). Ph.D. (Statistics). Identication of worsening subjects and treatment responders in comparative longitudinal studies. Jointly with Y. Zhao (Division of Cardiology, Medicine, UBC).
35. Tanja Högg (2018). Ph.D. (Statistics). Bayesian adjustments for disease misclassication in epidemiological studies of health administrative databases, with applications to multiple sclerosis research. Jointly with P. Gutafson and Y. Zhao (Division of Cardiology, Medicine, UBC). Winner: 2017 Marshall Prize.
36. Rachel Lobay (2020). M.Sc. (Statistics). Impact of informative censoring on estimated treatment effects for confirmed disability worsening in multiple sclerosis clinical trials.
37. Graeme Kempf (2024). M.Sc. (Statistics). The impact of disease-modifying drugs for multiple sclerosis on hospitalizations and mortality in British Columbia: a retrospective study using an illness-death multi-state model. Jointly with Y. Zhao (Population Data BC and Division of Neurology, Medicine, UBC).
38. Tae Yoon (Harry) Lee (2024). Ph.D. (Pharmaceutical Sciences). Projecting the outcomes of early interventions for asthma: data-driven and modeling studies. Jointly with M. Sadatsafavi (Pharmaceutical Sciences, UBC).

B. Supervisory committee service:

1. A.L. Ananthanarayanan (1978). Ph.D. (Commerce).
2. Amanda F. Nemec (1978). M.Sc. (Mathematics).
3. Richard T.M. Lee (1980). M.Sc. (Mathematics).
4. Stephen A.Y. Omule (1981). Ph.D. (Forestry).
5. Marc E. Gessaroli (1981). M.P.E. (Physical Education).
6. Murray J.A. Besler (1982). M.Sc. (Mathematics).
7. Christian Genest (1983). Ph.D. (Mathematics).
8. Helene Crepeau (1983). M.Sc. (Mathematics).
9. Brian G. Leroux (1985). M.Sc. (Statistics).
10. Lindsay Dunn (1986). M.Sc. (Statistics).
11. Cliff Stanley (1988). Ph.D. (Geological Sciences).
12. Lisa Kan (1988). M.Sc. (Statistics).

13. Brian Leroux (1989). Ph.D. (Statistics).
14. Clint Hirst (1993). M.Sc. (Medical Genetics).
15. Grace Chiu (1996). M.Sc. (Statistics).
16. Jian-Meng Xu (1996). Ph.D. (Statistics).
17. Xiaochun Li (1996). Ph.D. (Statistics).
18. Billy Ching (1997). M.Sc. (Statistics).
19. Renjun Ma (1999). Ph.D. (Statistics).
20. Teri Fisher (1999). M.Sc. (Experimental Medicine).
21. Yuanlong Liu (1999). Ph.D. (Human Kinetics).
22. Stephanie Ebelt (1999). M.Sc. (Occupational Hygiene).
23. Matias Salibian-Barrera (2000). Ph.D. (Statistics).
24. Stephen Wang (2001). Ph.D. (Statistics).
25. Rong Zhu (2002). Ph.D. (Statistics).
26. Kira E. Rich (2002). M.Sc. (Occupational Hygiene).
27. Yinshan Zhao (2004). Ph.D. (Statistics).
28. Isabella Ghement (2005). Ph.D. (Statistics).
29. Lawrence McCandless (2007). Ph.D. (Statistics).
30. Jean Francois Plante (2007). Ph.D. (Statistics).
31. Jochen Brumm (2008). Ph.D. (Statistics).
32. Yongliang (Vincent) Zhai (2016). Ph.D. (Statistics).
33. Harlan Campbell (2019). Ph.D. (Statistics).
34. Liang Xu (2022). M.Sc. (School of Population and Public Health).
35. Ali Mirza (2023). Ph.D. (Bioinformatics).
36. Poljanka Johnson (current). Ph.D. (Neuroscience).

PROFESSIONAL SERVICE AND EXPERIENCE:

Department:

Member	Graduate Affairs Committee, Mathematics, 1978-79, 1982-83. Committee to Review the Headship, Mathematics, 1982-83. Curriculum Committee, Statistics, 1983-86 (Chair), 1990-91, 2004-06. Graduate Affairs, Statistics, 1987-88 (Chair), 1990-91. Committee on Appointments (Chair), 1988-94, 2000-03. Peer Evaluation of Teaching Committee, 1993-94, 1995-96, 2008-09, 2013-15 (Chair), 2015-16. Executive Committee, 1995-96, 1998-2001, 2004-06, 2008-10, 2013 (July-Dec), 2018 (July-Dec). Future of Computing Planning Committee (Chair), 1998-99. Steering Committee, Statistical Consulting and Research Laboratory, 1998-2000, 2004-07 (Chair), 2008-12 (Chair), 2015-Dec 16 (Chair). Awards Committee (Chair), 2001-02, 2005-06. STAT 3xx/4xx/5xx Statistical Inference Curriculum Review Committee, 2006-07. Undergraduate Program Review Committee, 2009-10. STAT 300 Development Committee, 2011-12. Hiring Committee for Faculty Research Positions (Chair), 2018-19. Unit Representative, Emeritus College, 2024-
Co-ordinator	Statistics Workshop, 1980-81, 1982-84. Biostatistics Research Group, 1991-92, 1993-94, 1995-97, 1999-2002.
Director	Statistical Consulting Service, Institute of Applied Mathematics and Statistics, 1976-78, 1982-83. Statistical Consulting and Research Laboratory, 1985-86, 1995-97.
Supervisor	Consulting, Statistical Consulting and Research Laboratory, 1998-2000, 2002-03, 2005-07, 2008-12, 2015-Dec 2016.

Associate Head 1995-96, 1998-2001, 2008-10.

Scientific Advisor Applied Statistics and Data Science group, 2019 -

Faculty:

Member
Curriculum Committee, 1983-86, 2004-06.
Timetabling and Registration Committee, 1987-88, 1990-93.
Dean's Advisory Committee on Promotions and Tenure, 1995-97, 1998-2001, 2006-07.
Science Technology Management Curriculum Development Committee, 1995-96.
Committee on Curriculum Objectives and Transferable Skills for Years 1 & 2, 1996-97.
Achievement Awards Committee, 2002-03.
Centenary Committee, 2007-08.
Governor General Gold Medals Adjudication Committee, 2011.
Killam Post-Doctoral Research Prize Committee, 2015.

University:

Member
President's Selection Committee for Head of Mathematics, 1982-83.
President's Selection Committee for Head of Statistics, 1983-84, 1987-88, 1996-97.
Killam Research Prize Committee, 1990-91.

Head Department of Statistics, 1989-94.

Acting Head Department of Statistics, 2002-03.

Professional:

Member
Search Committee for Editor for *Annals of Probability*, Institute of Mathematical Statistics, 1975-76.
Program Committee, Institute of Mathematical Statistics western regional meeting, 1981, 1983.
Program Committee, Statistical Society of Canada annual meeting, 1981, 1983, 1986, 1988 (Chair), 1991, 1993, 1997.
Board of Directors, Statistical Society of Canada, 1982-84, 2003-05.
Pierre Robillard Award Committee, Statistical Society of Canada, 1982-84 (Chair 1983-84).
Committee on Co-sponsorship of Conferences, Institute of Mathematical Statistics, 1985-88.
Research Committee, Statistical Society of Canada, 1986-89, 1999-2002 (Chair).
Committee on Statistical Education, Statistical Society of Canada, 1987-88.
Committee on Meetings, Statistical Society of Canada, 1987-90.
Awards Committee, Statistical Society of Canada, 1988-91 (Chair 1990-91), 2015-17 (Chair 2016-17).
Committee on Symposia and Conferences, Section on Statistics and the Environment, American Statistical Association, 1991-93.
Elections Committee, Biostatistics Section, Statistical Society of Canada, 1993-94, 1997-98 (Chair).
Publications Committee, Statistical Society of Canada, 1997-98.
Elections Committee, Statistical Society of Canada, 1997-2001.
Statistical Society of Canada representative to the Fields Institute for Research in Mathematical Sciences, 1999-2000.
Selection Committee, Distinguished Lecture Series in Statistical Science, Fields Institute for Research in Mathematical Sciences, 2003-07.
Ad-hoc Committee on New Awards (Chair), Statistical Society of Canada, 2005-06.
Selection Committee, Award for Impact of Applied and Collaborative Work, Statistical Society of Canada, 2009-12.
Program Committee, 2012 Joint Statistical Meetings (Statistical Society of Canada representative), 2010-12.

Membership Committee (Chair), Statistical Society of Canada, 2013-14.
Committee of Presidents of Statistical Societies, 2013-16 (Executive Committee member 2015-16).
Executive Committee, Statistical Society of Canada, 2013-16.
Office Committee, Statistical Society of Canada, 2013-16.
Search Committee for Scientific Director of the Canadian Statistical Sciences Institute, 2014.
Ad-hoc Fundraising Committee, Statistical Society of Canada, 2014-17.
Election Committee (Chair), Statistical Society of Canada, 2015-16.
Accreditation Appeals Committee (Chair), Statistical Society of Canada, 2015-16.
Canadian (Undergraduate Statistics) Curriculum Working Group, 2015-18.
Committee of Presidents of Statistical Societies Awards Committee, 2017-20.

Member

Peer Review Committee for U.S. EPA's National Surface Water Survey: Eastern Lakes Survey - Phase II Research Plan, 1985-86.
NSERC Grant Selection Committee for the Statistical Sciences, GSC #14, 1987-90 (Chair 1989-90).
Peer Review Committee for U.S. EPA's State of Science and 1990 Integrated Assessment: Aquatic Effects, 1988-89.
Review Panel for Headship of the Division of Epidemiology, Biometry and Occupational Oncology, Cancer Control Agency of British Columbia, 1989.
Statistical Overview Committee for U.S. EPA's Environmental Monitoring and Assessment Program (EMAP), 1989-90.
Advisory Board, Laboratory for Research in Statistics and Probability, Carleton University, 1990-
Review Panel for the graduate program, Department of Mathematics and Statistics, University of Calgary, 1991.
Study Advisory Board, Schering AG clinical trial of Interferon beta-1b in secondary progressive multiple sclerosis (Study 93.079), 1994-99.
US National Multiple Sclerosis Society's Clinical Outcomes Assessment Task Force, 1994-98.
Study Advisory Board, Pharmacia & Upjohn clinical trial of Linomide in secondary progressive multiple sclerosis (Study 95 Line 145), 1995-97.
Data Safety and Monitoring Committee, ICOS Corporation Phase II study of Hu23F2G in acute exacerbations of multiple sclerosis (Study A96002i), 1996-98.
Task Force on Ethics and Safety, Tzu Chi Institute for Alternative and Complimentary Medicine, Vancouver, 1996-97.
North Atlantic Collaboration on Magnetic Resonance Imaging in Multiple Sclerosis Task Force on Treatment Monitoring, 1997-99.
Health Canada Expert Review Panel on Cladribine in the Management of Multiple Sclerosis, 1998.
FDA Magnetic Resonance Imaging Expert Review Panel on Cladribine as a Treatment for Multiple Sclerosis, 1998.
Independent Data Monitoring Committee, Schering AG's Phase II study of oral interferon-1a in relapsing-remitting multiple sclerosis (Study 98.150), 1999-2000.
MRI Working Group, International Medical Advisory Board, International Federation of Multiple Sclerosis Societies, 1999-2004.
Health Effects Institute Expert Review Panel for Butadiene Biomarker Epidemiology, 2000-01.
Canada Research Chairs College of Reviewers, 2000-
CIHR University-Industry Peer Evaluation Review Committee, 2000-01.
Steering Committee for the Statistical Sciences (Chair), NSERC Reallocation Exercise, 2000-02.
Peer Review Panel for International Multiple Sclerosis Trials, Research and Resource Center (IMSTRaRC), International Federation of Multiple Sclerosis Societies, 2000.
Health Effects Institute Expert Review Panel for Validation of Benzene Biomarkers, 2000-02.
US National Multiple Sclerosis Society International Advisory Committee on Clinical Trials, 2001-12.
Independent Advisory Board, Schering AG BENEFIT study of interferon-1b in patients with a first demyelinating event suggestive of multiple sclerosis, 2001-06.
Independent Data Monitoring Committee, Berlex Canada Phase II study of oral mesopram in relapsing-remitting or secondary progressive multiple sclerosis (Study 306083), 2002-04.

Independent Data Monitoring Committee, Schering AG Phase II STEPS study of spheramine in advanced Parkinson's disease (Study 305405), 2002-08.
Independent Data Monitoring Committee, Opexa Therapeutics Phase II TERMS study of tovaxin in clinically isolated syndrome or relapsing-remitting multiple sclerosis, 2006-08.
Expert Panel on the Therapeutic Effectiveness of Disease Modifying Therapies in Multiple Sclerosis, Pfizer-Serono, 2007.
Independent Data Monitoring Committee, Merck-Serono Phase II study of atacicept in relapsing multiple sclerosis (Study 28063), 2007-11.
Independent Data Monitoring Committee, Merck-Serono Phase II study of atacicept in optic neuritis (Study 28156), 2007-11.
Independent Data Monitoring Committee, Multiple Sclerosis Society of Canada Phase III study of minocycline in clinically isolated syndromes, 2007-16.
Expert Panel on the Design and Interpretation of Modern Multiple Sclerosis Clinical Trials, Pfizer-Serono, 2008.
Advisory Board on the Impact of Neutralizing Antibodies on the Efficacy of Betaferon, Bayer HealthCare Pharmaceuticals, 2008.
Independent Data Monitoring Committee, Novartis Phase III TELESTO study of deferasirox in patients with myelodysplastic syndromes and transfusional iron overload, 2009-18.
Review Panel for the graduate programs, Department of Statistics, University of Manitoba, 2010.
US National MS Society's Multiple Sclerosis Functional Composite Task Force, 2011-12.
International Progressive Multiple Sclerosis Collaborative, MS International Federation and the National MS Societies of Canada, Italy, the Netherlands, the UK and the US, 2012-14.
US National MS Society's Multiple Sclerosis Outcome Assessments Consortium, 2012-15.
Independent Data Monitoring Committee, The Canadian Study Group on CCSVI Phase I/II trial of balloon venoplasty in multiple sclerosis, 2012-17.
Steering Committee, EMD Serono Phase 2 trial of plovamer acetate in relapsing remitting multiple sclerosis, 2013-15.
Review Panel for undergraduate program proposal in Data Science, University of Toronto, 2017.
Steering Committee, Biogen US international collaboration for real-world evidence in Alzheimer's Disease (ICARE AD), 2021-22.
Independent Data Monitoring Committee, Qu Biologics RESILIENCE study of QBKPN site-specific immunomodulator on innate immune function in seniors in assisted-living and long-term care facilities, 2022-
Independent Data Monitoring Committee, Qu Biologics PERIOP-06 study of perioperative QBECO site specific immunomodulator in patients with metastatic colorectal adenocarcinoma within the liver undergoing resection, 2023-

President	Biostatistics Section, Statistical Society of Canada, 1996-97 (President-Elect, 1995-96; Past-President, 1997-98).
President	Statistical Society of Canada, 2014-15 (President-Elect, 2013-14; Past-President, 2015-16).
Associate Editor	*Journal of the American Statistical Association,* Book Review Section, 1977-81. *Canadian Journal of Statistics,* 1984-1991 (Senior Associate Editor, 1989-91). *Sequential Analysis*, 1996-2003.
Acting Editor	*Biostat News,* WWW-based newsletter, Biostatistics Section, Statistical Society of Canada, 1997-98.
Consultant	Jestley Kirstiuk Robert Gardiner & Associates The Vancouver Province Crawford, Kennedy & Wakefield City of Vancouver Police Department

Harris, Campbell & Threfall
Orris, Meyers & La Liberte
Teck Research
Foodwest Resource Consultants
Technology Development Corporation
Jarrett Goold Elliott & Associates
Price Waterhouse Associates
Massachusetts General Hospital, Boston
Du Moulin, Lowes & Boskovich
DPA Consulting Group
B.C. Ministry of Forests
U.S. Environmental Protection Agency, Washington, DC
Robin Smith Consultants Ltd.
B.C. Ministry of Attorney General
Health and Welfare Canada, Ottawa
B.C. Ministry of Health
Berlex Laboratories, Richmond, California
AutoImmune Inc., Boston
The Ares-Serono Group, Geneva
Broughton, Peterson, Yang & Anderson
Antifaev & Associates
Athena Neurosciences, San Francisco
Astra Arcus, Sodertalje, Sweden
Schering AG, Berlin
Angiotech Pharmaceuticals
Bayer AG, Wuppertal, Germany
Taylor, Jordan & Chafetz
Blake, Cassels & Graydon
BIOMS Medical, Edmonton
Transition Therapeutics, Toronto
Bayhill Therapeutics, Palo Alto
Slater Vecchio
Opexa Therapeutics, Houston
Murphy Battista
Fullbright & Jaworski, San Antonio
Schering-Plough, Kenilworth, New Jersey
Solstice Neurosciences, Malvern, Pennsylvania
Eisai Medical Research, Ridgefield, New Jersey
PRA International, Charlottesville
Bayer-Schering AG, Berlin
BTG International, London
Bayer Canada, Toronto
Bayer Pharma AG, Berlin
Myelin Repair Foundation, Saratoga
Teva Pharmaceuticals Europe, Amsterdam
Biogen Canada, Mississauga
Biogen, Cambridge
Pacific Blue Cross, Burnaby

Referee

American Journal of Epidemiology
Annals of Neurology
Annals of Probability
Annals of Statistics

Annals of the Institute of Statistical Mathematics
Applied Statistics
Archives of Neurology
Biometrics
Biometrika
Brain
Canadian Journal of Statistics
Clinical Investigation
Communications in Statistics
Controlled Clinical Trials
Environment International
Environmental and Ecological Statistics
Environmetrics
International Statistical Review
Journal of Geophysical Research: Earth Surface
Journal of Statistical Computation and Simulation
Journal of Statistical Planning and Inference
Journal of the American Statistical Association
Journal of Official Statistics (Sweden)
Journal of the Neurological Sciences
Journal of Neurology
Journal of Neurology, Neurosurgery and Psychiatry
Journal of Pediatrics
Journal of the Royal Statistical Society, Series B
Multiple Sclerosis
Multivariate Behavioral Research
Neurology
Neurology: Clinical Practice
Science Translational Medicine
Sequential Analysis
SIAM Journal of Applied Mathematics
Statistica Sinica
Statistics and Probability Letters
Statistics in Medicine
Utilitas Mathematics

Grant Reviewer BIRS, CIHR, EPA, EPSRC, HEI, HSURC, Israel Science Foundation, Leverhulme Trust, MITACS, MRC, MS Scientific Research Foundation, MS Research Australia, NIH, National MS Society, NSERC, NSA, NSF, ONR, and Portuguese Foundation for Science and Technology

External Examiner Remy J. van der Ven (Supervisor: Neville Weber), School of Mathematics and Statistics, University of Sydney, April 1996.
Baojiang Chen (Supervisor: Richard Cook), Department of Statistics and Actuarial Sciences, University of Waterloo, September 2008.
Satwant Sony Brar (Supervisor: Penny Brasher), Department of Community Health Sciences, University of Calgary, September 2008.

AWARDS:

2002 Leadership Award, Faculty of Science, UBC
2006 Teaching Award, Graduate Student Association, Department of Statistics, UBC
2014 Award for the Impact of Applied and Collaborative Work, Statistical Society of Canada
2016 Honoured Alumni of the Year Award, Department of Statistics, University of Manitoba

RESEARCH SUPPORT HELD:

1977 NSERC 3 year operating grant ($2,266 per annum). Sequential statistical procedures.
1980 NSERC 3 year operating grant ($4,772 per annum). Design and analysis of sequential clinical trials.
1981 NSERC study leave travel grant ($796).
1983 NSERC 3 year operating grant ($16,107 per annum). Design and analysis of (sequential) clinical trials.
1984 SIMS (EPA) 3 year co-operative research agreement (approximately $58,000 U.S. per annum). Statistical methods for obtaining and analyzing acid rain and related data (co-PI with J.V. Zidek).
1985 NSERC equipment grant ($16,100). Infrastructure computing facilities (with P. de Jong, N. Glick, N.M. Reid and J.V. Zidek).
1986 NSERC equipment grant ($12,186). Infrastructure computing facilities (co-PI with J.V. Zidek).
1986 NSERC 3 year infrastructure grant ($17,338 per annum). Statistical Consulting and Research Laboratory (co-PI with J.V. Zidek).
1986 NSERC 3 year operating grant ($17,083 per annum). Design of sequential (clinical) experiments.
1986 Health and Welfare Canada contract ($7,000). Design of monitoring networks for long range transport of air pollution (with P. Guttorp, P. Sampson and J. Zidek).
1986 NSERC study leave travel grant ($993).
1986 SERC (U.K.) visiting research fellowship at University of Sussex, England ($16,100). Planning sequential experiments.
1988 NSERC conference grant ($10,000). On behalf of the Statistical Society of Canada for symposia during the 1988 Annual Meeting at the University of Victoria.
1988 Health and Welfare Canada contract ($7,500). Air pollution and human health in Prince George, BC: Hospital admissions data.
1988 SIMS (EPA) 3 year co-operative research agreement (approximately $75,400 US per annum). Statistics and environmental factors in health (co-PI with J.V. Zidek). Extended to fourth year at reduced level of funding.
1989 Health and Welfare Canada contract ($11,600). Air pollution and human health in Prince George, BC: Emergency room visits data.
1989 NSERC 3 year operating grant ($20,540 per annum). Sequential clinical experimentation and other applications.
1989 NSERC 3 year infrastructure grant ($31,874 per annum). Statistical Consulting and Research Laboratory (co-PI with J.V. Zidek).
1990 BC Ministry of Health contract ($17,088). Follow-up study on air pollution and human health in Prince George, BC.
1992 NIH 3 year project grant ($465,000 US total). Inhalable particle pollution and childhood asthma (co-investigator with S. Vedal, Respiratory Division, VGH).
1992 NSERC 3 year individual operating grant ($18,500 per annum). Sequential clinical experimentation and other applications (extended for 4th year).
1993 B.C. Ministry of Forests contract ($1,000). Post-stratification of a stratified random sample.
1994 Berlex Laboratories (Richmond, California) contract ($17,500 US). Longitudinal analyses for the UBC 6-weekly sub-study of the Betaseron clinical trial in relapsing-remitting multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).
1995 Health Canada contract ($15,000). Ozone exposures in Montreal, Toronto and Vancouver estimated via pNEM (co-PI with H. Zhang, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).
1996 B.C. Lung Association project grant ($43,000). Ambient inhalable particule pollution and daily mortality in the Lower Mainland of B.C. (with M. Brauer and S. Vedal, Medicine, UBC).
1996 NSERC 4 year individual operating grant ($20,400 per annum). Sequential clinical experimentation and other applications.
1997 B.C. Lung Association project grant ($38,100). Personal exposure to fine particles: An assessment of exposure misclassification in air pollution health effects studies (with M. Brauer and S. Vedal, Medicine, UBC).
1997 Berlex Canada 3 year research grant ($296,000 total). Factors related to the production of antibodies to beta interferon and their clinical relevance (with J. Oger, D. Paty, and V. Devonshire, Medicine, UBC)
1998 Schering AG (Berlin, Germany) contract ($14,900 US). Neutralizing antibodies and the efficacy of Interferon beta-1b in the European clinical trial of secondary progressive multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

1998 Ares-Serono Group (Geneva, Switzerland) contract ($31,200 US). Dose-response relationships for Interferon beta-1a in clinical trials of relapsing-remitting multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

1999 EPA co-operative research agreement via National Research Center for Statistics and the Environment at U. of Washington ($25,325 US). Statistical methods in particulate matter air pollution research (co-PI with J.V. Zidek).

1999 Ares-Serono Group (Geneva, Switzerland) contract ($23,270 US). Correlations between clinical and MRI responses in the PRISMS Interferon beta-1a clinical trial of relapsing-remitting multiple sclerosis (with H. Wong and M. Salibian-Barrera, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

1999 Ares-Serono Group (Geneva, Switzerland) contract ($19,890 US). The role of baseline covariates in the PRISMS interferon beta-1a clinical trial of relapsing-remitting multiple sclerosis (with A. Smith and R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2000 NSERC 4 year individual operating grant ($25,000 per annum). Statistical methodology and design for clinical applications.

2000 Schering AG (Berlin, Germany) contract ($11,630 US). Neutralizing antibodies and the efficacy of Interferon beta-1b in the European open label follow-up study of secondary progressive multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2000 Schering AG (Berlin, Germany) contract ($15,920 US). Neutralizing antibodies and the efficacy of Interferon beta-1b in the North American clinical trial of secondary progressive multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2000 Toxic Substances Research Initiative grant ($90,000). Air pollution health effects in potentially susceptible subpoplutions (with S. Vedal and M. Brauer, Medicine, UBC and J. Zidek).

2000 B.C. Lung Association project grant ($44,000). Air pollution health effects in obstructive airways disease (with M. Brauer and S. Vedal, Medicine, UBC).

2001 CIHR Strategic Training Program Proposal Development Grant ($4,200). Biostatistical methodology and collaborative research (with J. Bryan, P. Gustafson, N. Heckman, H. Joe, M. Schulzer, L. Wu and J. Zidek).

2003 Schering AG (Berlin, Germany) contract ($13,245). Neutralizing antibodies and the efficacy of Interferon beta-1b on T2 lesions in the European clinical trial of secondary progressive multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2003 Schering AG (Berlin, Germany) contract ($15,120). Neutralizing antibodies and the efficacy of Interferon beta-1b in the European open label follow-up study of secondary progressive multiple sclerosis after 54 months of follow-up (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2004 NSERC 5 year individual operating/discovery grant ($25,000 per annum). Statistical design and methodology for health applications.

2004 Schering AG (Berlin, Germany) contract ($10,830). Neutralizing antibodies and the efficacy of Interferon beta-1b in the North American clinical trial of secondary progressive multiple sclerosis: Follow-up analyses (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2004 Multiple Sclerosis Society of Canada 2 year research grant ($70,360 total). The impact of beta interferon therapy on multiple sclerosis: effectiveness and toxicity (with H. Tremlett, Medicine, UBC).

2006 CIHR 3 year research grant ($150,000 total). Exploring the relationship between androgens, interpersonal factors and sexual health in aging women (with R. Basson, L. Brotto and F. Labrie, Psychiatry, UBC).

2006 GVRD research contract ($10,000). Predicting future water demand in the GVWD (with C. Taylor and R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2008 Opexa Therapeutics (Houston) contract ($5,750 US). Topline final analyses for Phase II TERMS study of tovaxin in multiple sclerosis (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2009 Multiple Sclerosis Society of Canada 2 year research grant ($92,768 total). Improving safety monitoring and design of future multiple sclerosis clinical trials using historical MRI data (with T. Traboulsee, D. Li and Y. Zhao, Medicine, UBC).

2009 NSERC 5 year individual operating/discovery grant ($15,000 per annum). Statistical design and analysis methodology for clinical trials.

2009 Bayer-Schering Pharma AG (Berlin, Germany) contract (58,735 Euros). Neutralizing antibodies and the efficacy of Interferon beta-1b in the BENEFIT and BEYOND studies (with R. White and F. Zhu, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2009 CIHR 3 year research grant ($418,612 total). The BeAMS Study: Long-term benefits and adverse effects of beta-interferon for multiple sclerosis (with H. Tremlett, P. Gustafson, E. Kingwell, P. Rieckmann, M. van der Kop & Y. Zhao, Medicine, UBC).

2009 US National Multiple Sclerosis Society 3 year research grant ($67,223 total; top-up to CIHR grant). The BeAMS Study: Long-term benefits and adverse effects of beta-interferon for multiple sclerosis (with H. Tremlett, P. Gustafson, E. Kingwell, P. Rieckmann, M. van der Kop & Y. Zhao, Medicine, UBC).

2010 Bayer-Schering Pharma AG (Berlin, Germany) contract (47,430 Euros). Prediction of "later-in-study" treatment arm responses in the BENEFIT and BEYOND studies (with R. White, Statistical Consulting and Research Laboratory, Department of Statistics, UBC).

2011 Multiple Sclerosis Society of Canada 1 year research grant ($51,775). Improving safety monitoring and design of future multiple sclerosis clinical trials (with T. Traboulsee, D. Li and Y. Zhao, Medicine, UBC).

2011 CIHR 4 year research grant ($480,388 total). Stress hormones, mood and women's sexual desire (with R. Basson, L.A. Brotto, A. Rellini, J. Weinberg & A. Young, Psychiatry, UBC).

2012 CIHR 1 year research grant ($99,785 total). The BeAMS50 study: Long-term benefits and adverse effects of beta-interferon for older MS patients (with H. Tremlett, C. Evans, P. Gustafson, M. Karim, E. Kingwell, A. Shirani & Y. Zhao, Medicine, UBC).

2013 US National Multiple Sclerosis Society 3 year research grant ($283,339 total). Do the beta-interferons prolong life in people with multiple sclerosis (with H. Tremlett, G. Edan, E. Kingwell, E. Leray & J. Oger, Medicine, UBC).

2014 NSERC 5 year individual operating/discovery grant ($18,000 per annum). Statistical modeling and monitoring of longitudinal responses on multiple units. Extended to 2022.

INVITED TALKS:

A. At conferences:

International Conference on Dynamic Programming, UBC, 1977.
IMS/WNAR Western Regional Meeting, Eugene, 1978.
IMS/WNAR Western Regional Meeting, UCLA, 1979.
CMS Annual Winter Meeting, Ottawa, 1979.
Pacific Northwest Statistics Day, UBC, 1979.
Statistics Day, Carleton University, 1983.
IMS/WNAR Western Regional Meeting, San Luis Obispo, 1985.
IMS/ENAR Eastern Regional Meeting, Atlanta, 1986
Environmetrics 86, Ottawa, 1986.
Medical Statistics Conference, Oberwolfach, 1987.
46th Meeting of the International Statistical Institute (invited discussant), Tokyo, 1987.
Science and Engineering Research Council (UK) Workshop on Sequential Methods in Statistics, Edinburgh, 1988.
IMS Annual Meeting, Fort Collins, 1988.
International Workshop on Therapeutic and Diagnostic Trials in Multiple Sclerosis, Jekyll Island, Georgia, 1988.
Fifth Annual EPA Conference on Statistics, Charlottesville, 1989.
Canadian Network on Productivity Conference, UBC, 1989.
Changes of the Environment: A Challenge to Statistics, Finnish Societies of Biostatistics and Environmental Science, Helsinki, 1990.
Pacific Northwest Statistics Day, Western Washington University, 1990.
Institute of Mathematics and its Applications, Workshop on Environmental Studies, Minneapolis 1992.
Health and Welfare Canada and Carleton University Laboratory for Research in Probability and Statistics Workshop on Statistical Analysis of Health and Environmental Data in Space and Time, Ottawa, 1993.
National Multiple Sclerosis Society Workshop on Outcomes Assessment in Multiple Sclerosis Clinical Trials, Charleston, South Carolina, 1994.
National Multiple Sclerosis Society's Task Force on Clinical Outcomes Assessment Meeting, Chicago, 1994.
Biopharmaceutical Applied Statistics Symposium (BASS), San Diego, 1996.
International Federation of Multiple Sclerosis Societies' Workshop on The Role of Magnetic Resonance Techniques in Understanding and Managing Multiple Sclerosis, Oxford, 1997.

Symposium on Neutralizing Antibodies to Interferon Beta-1b, Vancouver, 1997.
Symposium on Controversies in the Management of Relapsing Multiple Sclerosis, Kananaskis, 1997.
International Workshop on Interferon Antibodies, New York, 1997.
Americas Committee for Treatment and Research in Multiple Sclerosis (ACTRIMS) Annual Meeting, San Diego, 1997.
First International Working Party Meeting on the Use of Magnetic Resonance in Multiple Sclerosis, Cambridge, 1997.
Drug Information Association's Annual European Workshop on Statistical Methodology in Clinical Research and Development, Amsterdam, 1998.
Workshop on Statistical Methodology in Multiple Sclerosis Clinical Trials, Genoa, 1999.
Workshop on Sequential Optimization, U. of Sussex, 1999.
Workshop on Clinical Trial Design and Disability Measures in Multiple Sclerosis Clinical Trials, New York, 1999.
Workshop on Recent Developments and Applications in the Statistical Analysis of Discrete Structures, Ludwig Maximilian University, Munich, October, 2001.
Workshop on Relevance of Neutralizing Antibodies to Beta Interferon Therapy in Multiple Sclerosis, Vienna, May, 2003.
Consortium of Multiple Sclerosis Centers Workshop on Anti-Interferon Antibodies in Interferon-Treated Multiple Sclerosis Patients, London, May, 2003.
Institut de Science et Mathematiques 2003 Graduate Student Conference, Quebec City, May, 2003.
Annual Meeting, Statistical Society of Canada, Halifax, June, 2003.
National Multiple Sclerosis Society Workshop on Future Clinical Trials Issues in Multiple Sclerosis, Washington, DC, December, 2004.
Annual Meeting, Statistical Society of Canada, Saskatoon, June, 2005.
Annual Meeting, American Academy of Neurology, San Diego, April, 2006.
Annual Meeting, International Society for Magnetic Resonance in Medicine, Seattle, May, 2006.
23rd International Biometric Conference (invited discussant), Montreal, July, 2006.
PIMS Environmetrics Collaborative Research Group Inaugural Workshop, Semiahmoo, January, 2007.
National Multiple Sclerosis Society Workshop on the Ethics of Placebo Controlled Clinical Trials in Multiple Sclerosis, Washington, DC, March, 2007.
Pacific Northwest Statistics Days, Simon Fraser University, April, 2007.
Conference on Statistical and Epidemiologic Issues in Multiple Sclerosis, Harvard, April, 2007.
Annual Meeting, International Society for Magnetic Resonance in Medicine, Berlin, May, 2007.
MAGNIMS Workshop on Efficient Monitoring of Immunomodulation in Multiple Sclerosis using Magnetic Resonance Imaging, Amsterdam, November, 2008.
National Multiple Sclerosis Society Workshop on Multiple Sclerosis Risk Factors and Frequency, New York, February, 2009.
NABINMS Transatlantic Symposium on Neutralising Antibodies to Interferons in Treatment of Multiple Sclerosis, Amsterdam, June, 2009.
BIRS Workshop on Emerging Issues in the Analysis of Longitudinal Data, Banff, August, 2009.
Annual Meeting, Statistical Society of Canada, Quebec City, May, 2010 (invited panel discussant).
National Multiple Sclerosis Society International Conference on Disability Outcomes in Multiple Sclerosis, Washington, May, 2011.
National Multiple Sclerosis Society Multiple Sclerosis Functional Composite Task Force Workshop, Washington, December, 2011.
Multiple Sclerosis Update Conference, Montreal, November, 2012.
Annual Meeting, Statistical Society of Canada, Edmonton, May, 2013 (invited panel discussant).
Annual Meeting, Statistical Society of Canada, Halifax, June, 2015 (Impact Award plenary presentation).
Fall Meeting, Statistical Society of Ottawa, Ottawa, September, 2015.
Annual Meeting, Statistical Society of Canada, St. Catherines, May, 2016 (invited panel discussant).
Joint Statistical Meetings, Vancouver, July, 2018 (invited panel discussant).

B. At institutions:

1975	Mathematics, MIT
	Mathematics, UBC
	Mathematics, Washington
	Statistics, Toronto
	Mathematics, SUNY-Binghamton
1976	Statistics, Harvard
1977	Statistics, Stanford
	Statistics, Manitoba
1978	Mathematics, Simon Fraser
1979	Mathematics, MIT
1981	Biostatistics, Harvard
	National Cancer Institute, Bethesda
	Sloan Kettering Cancer Research Institute, New York
1982	Biostatistics, Harvard
	Statistics, Western Ontario
	Statistics, Waterloo
	Operations Research, Cornell
	Mathematics, MIT
1983	Surgery, VGH
	Mathematics, Carleton
1986	Mathematics, Sussex
	Statistics, Sussex
1987	Mathematics, Keele
	Statistics, London
	Biomathematics, Oxford
	Statistics, Heidelberg
	Mathematics, Freiburg
	Mathematical Sciences, Bath
	Statistical Laboratory, Cambridge
	Theoretical Statistics, Aarhus
	Biostatistics, Copenhagen
	Applied Statistics, Reading
	Statistics, Australian National
1989	Mathematics, McGill
	Ministry of Health, Victoria
	Health Care and Epidemiology, UBC
	Ministry of Health, Prince George
1990	Faculty of Science Lecture Series, Caribou College
1991	Faculty of Science Lecture Series, Okanagan College
	Community Health Sciences, Calgary
1993	Biostatistics Research Group, UBC
	Air Pollution Discussion Group, UBC
1994	Biostatistics Research Group, UBC
	Clinical Development CV/CNS, Schering AG, Berlin
1995	Statistics, Auckland
	Community Health, Auckland
	Mathematical Statistics, Sydney
	Environmental Sciences, Griffith (Brisbane)
1996	Neurology, UBC
	Berlex Laboratories, Richmond, California

1997	Statistics, Harvard
	Clinical Development CNS, Schering AG, Berlin
1998	Science First! Lecture Series, UBC
2001	Sylvia Lawry Centre for Multiple Sclerosis Research, Munich
2002	Editors Network, UBC
2003	CRM-ISM Colloquium, University of Quebec at Montreal
2004	Sylvia Lawry Centre for Multiple Sclerosis Research, Munich
2005	UBC/SFU PIMS Statistics Graduate Student Workshop Series, UBC
2006	UBC/SFU Joint Statistics Seminar Series, BC Cancer Agency
2007	Biogen Idec, Cambridge
2008	Finance and Applied Statistics, Australian National
	Multiple Sclerosis Preceptorship Workshop, Neurology, UBC
2009	Multiple Sclerosis Preceptorship Workshop, Neurology, UBC
	Biostatistics, Michigan
	Mathematics and Statistics, Victoria
	Statistics, Manitoba
2010	Multiple Sclerosis Preceptorship Workshop, Neurology, UBC
	Graduate Student Professional Development Program, FoGS, UBC
	PhD seminar series, School of Nursing, UBC
2012	Western Pacific EndMS Regional Research and Training Centre, UBC
2013	UBC/SFU PIMS Statistics Graduate Student Workshop Series, SFU
2016	Statistics, Manitoba
2017	Fraser Health Multiple Sclerosis Clinic, Burnaby
2018	Fraser Health Multiple Sclerosis Clinic, Burnaby
	MS Connect Seminar Series, UBC

PUBLICATIONS

I. PAPERS

a) Published and in Press:

1. Chernoff, H. & Petkau, A.J. An optimal stopping problem for sums of dichotomous random variables. *Annals of Probability, 4*, 875-889 (1976).

2. Petkau, A.J. Sequential medical trials for comparing an experimental with a standard treatment. *Journal of American Statistical Association, 73*, 328-338 (1978).

3. Chernoff, H. & Petkau, A.J. Optimal control of a Brownian motion. *SIAM Journal on Applied Mathematics, 34*, 717-731 (1978).

4. Koziol, J.A. & Petkau, A.J. Sequential testing of the equality of two survival distributions using the modified Savage statistic. *Biometrika, 65*, 615-623 (1978).

5. Petkau, A.J. An application of dynamic programming in statistics. In: *Dynamic Programming and its Applications,* M.L. Puterman (ed.), Academic Press, New York, 221-232 (1979).

6. Chernoff, H. & Petkau, A.J. A satellite control problem. In: *Optimizing Methods in Statistics*, J.S. Rustagi (ed.), Academic Press, New York, 89-124 (1979).

7. Petkau, A.J. Exact slopes for a life testing problem involving the two parameter exponential distribution. *Communications in Statistics: Theory and Methods, A8*, 1511-1521 (1979).

8. Petkau, A.J. On a life testing problem involving the two parameter exponential distribution. *Communications in Statistics: Theory and Methods, A8*, 1523-1534 (1979).

9. Petkau, A.J. Frequentist properties of three stopping rules for comparative clinical trials. *Biometrika, 67*, 690-692 (1980).

10. Chernoff, H. & Petkau, A.J. Sequential medical trials involving paired data. *Biometrika*, *68*, 119-132 (1981).

11. Joe, H., Koziol, J.A. & Petkau, A.J. Comparison of procedures for testing the equality of two survival distributions. *Biometrics, 37*, 327-340 (1981).

12. Olkin, I., Petkau, A.J. & Zidek J.V. A comparison of n-estimators for the binomial distribution. *Journal of the American Statistical Association, 76*, 637-642 (1981).

13. Michelassi, F., Landa, L., Hill, R.D., Lowenstein, E., Watkins, W.D., Petkau, A.J. & Zapol, W.M. Leukotriene D4: A potent coronary artery vasoconstrictor associated with impaired ventricular contraction. *Science, 217*, 841-843 (1982).

14. Harris, S.T., Neer, R.M., Segre, G.V., Petkau, A.J., Tully III, G.L., Daly, M. & Potts, J.T. Jr. Secondary hyperparathyroidism associated with dichloromethane diphosphonate treatment of Paget's disease. *Journal of Clinical Endocrinology and Metabolism, 55*, 1100-1107 (1982).

15. Michelassi, F., Castorena, G., Hill, R.D., Lowenstein, E., Watkins, W.D., Petkau, A.J. & Zapol, W.M. Effects of leukotrienes B4 and C4 on coronary circulation and myocardial contractility. *Surgery, 94*, 267-275 (1983).

16. Cote, C.J., Petkau, A.J., Ryan, J.F. & Welch, J.P. Wasted ventilation measured in vitro with eight anesthetic circuits used on children with and without inline humidification. *Anesthesiology, 59*, 442-446 (1983).

17. Koziol, J.A. & Petkau, A.J. Relative efficiencies of goodness of fit procedures with truncated data. *Canadian Journal of Statistics, 12*, 107-117 (1984).

18. Chernoff, H. & Petkau, A.J. Sequential medical trials with ethical cost. In: *Proceedings of the Berkeley Conference in Honor of Jerzy Neyman and Jack Kiefer,* Volume II, L.M. LeCam & R.A. Olshen (eds.), Wadsworth, Belmont, 521-538 (1985).

19. Cote, C.J. & Petkau, A.J. Thiopental requirements may be increased in children re-anesthetized at least one year after recovery from extensive thermal injury. *Anesthesia and Analgesia, 64*, 1156-1160 (1985).

20. Chernoff, H. & Petkau, A.J. Numerical solutions for Bayes sequential decision problems. *SIAM Journal on Scientific and Statistical Computing, 7*, 46-59 (1986).

21. Petkau, A.J. Truncated sequential medical trials involving paired data. *Canadian Journal of Statistics, 15*, 363-374 (1987).

22. Le, D.N. & Petkau, A.J. The variability of rainfall acidity revisited. *Canadian Journal of Statistics, 16*, 15-38 (1988).

23. Koziol, J.A., Petkau, A.J. & Taetle, R. Objective criteria for in-vitro drug responses in human tumor colony forming assays. *Medical Decision Making, 8*, 304-309 (1988).

24. Bather, J.A., Chernoff, H. & Petkau, A.J. The effect of truncation on a sequential test for the drift of Brownian motion. *Sequential Analysis, 8*, 169-190 (1989).

25. Petkau, A.J. & Sitter, R.R. Models for quantal response experiments over time. *Biometrics, 45*, 1299-1308 (1989).

26. Kastrukoff, L.F., Oger, J.J., Hashimoto, S.A., Sacks, S.L., Li, D.K., Palmer, M.R., Koopmans, R.A., Petkau, A.J., Berkowitz J. & Paty, D.W. Systemic lymphoblastoid interferon therapy in chronic progressive multiple sclerosis I. Clinical and MRI evaluation. *Neurology, 40*, 479-486 (1990).

27. Li, B. & Petkau, A.J. A regression model with random effects for beer chemistry and Canadians' beer preferences. *Canadian Journal of Statistics, 18,* 108-121 (1990). Also reprinted in: *Case Studies in Data Analysis*, Vol. 94 of Lecture Notes in Statistics, J.F. Gentleman & G.A. Whitmore (eds.), Springer-Verlag, New York, 159-172 (1994).

28. Paty, D.W., Koopmans, R.A., Zhao, G.J., Li, D.K.B., Oger, J.J.F. & Petkau, J. Magnetic resonance imaging (MRI) as an outcome measure in multiple sclerosis. *Journal of Neurological Rehabilitation*, *7*, 117-129 (1993).

29. Graham, J. & Petkau, A.J. Spatial association learning in hummingbirds. Chapter 9 in: *Case Studies in Biometry*, N. Lange, L. Ryan, L. Billard, D. Brillinger, L. Conquest & J. Greenhouse (eds.), John Wiley & Sons, New York, 159-187 (1994).

30. McNeney, B. & Petkau, A.J. Overdispersed Poisson regression models for studies of air pollution and human health. *Canadian Journal of Statistics, 22*, 421-440 (1994).

31. Johnson, D.L. & Petkau, A.J. A likelihood ratio test for equality of deviations from randomness. *Researches on Population Ecology*, *37*, 203-209 (1995).

32. Le, N.D., Petkau, A.J. & Rosychuk, R. Surveillance of clustering near point sources. *Statistics in Medicine*, *15*, 727-740 (1996).

33. Petkau, A.J. Statistical and design considerations for multiple sclerosis clinical trials. Chapter 4 in: *Multiple Sclerosis: Advances in Clinical Trial Design, Treatment and Future Perspectives,* D.E. Goodkin & R.A. Rudick (eds.), Springer-Verlag, London, 63-103 (1996).

34. Rudick, R., Fischer, J., Antel, J., Confavreux, C., Cutter, G., Ellison, G., Lublin, F., Miller, A., Petkau, J., Rao, S., Reingold, S., Syndulko, K., Thompson, A., Wallenberg, J., Weinshenker. B. & Willoughby, E. (the National Multiple Sclerosis Society's Clinical Outcomes Assessment Task Force). Clinical outcomes assessment in multiple sclerosis. *Annals of Neurology, 40*, 469-479 (1996).

35. D'yachkova, Y., Petkau, J. & White, R. Longitudinal analyses for magnetic resonance imaging outcomes in multiple sclerosis clinical trials. *Journal of Biopharmaceutical Statistics, 7*, 501-531 (1997).

36. Rudick, R., Antel, J., Confavreux, C., Cutter, G., Ellison, G., Fischer, J., Lublin, F., Miller, A., Petkau, J., Rao, S., Reingold, S., Syndulko, K., Thompson, A., Wallenberg, J., Weinshenker. B. & Willoughby, E. (the National Multiple Sclerosis Society's Clinical Outcomes Assessment Task Force). Recommendations from the National Multiple Sclerosis Society Clinical Outcomes Assessment Task Force. *Annals of Neurology, 42*, 379-382 (1997).

37. Vedal, S., Petkau, J., White, R. & Blair, J. Acute effects of ambient inhalable particles in asthmatic and non-asthmatic children. *American Journal of Respiratory and Critical Care Medicine*, *157*, 1034-1043 (1998).

38. Kastrukoff, L.F., Morgan, N.G., Zecchini, D., White, R., Petkau, A.J., Satoh J. & Paty, D.W. A role for natural killer cells in the immunopathogenesis of multiple sclerosis. *Journal of Neuroimmunology*, *86*, 123-133 (1998).

39. Petkau, A.J. Statistical methods for evaluating multiple sclerosis therapies. *Seminars in Neurology, 18*, 351-375 (1998).

40. Kastrukoff, L.F., Morgan, N.G., Zecchini, D., White, R., Petkau, A.J., Satoh, J. & Paty, D.W. Natural killer cells in relapsing-remitting multiple sclerosis: the effect of treatment with interferon beta-1b. *Neurology, 52*, 351-359 (1999).

41. Paszner, B., Petkau, J. & Oger, J. Neutralising antibodies to interferon-β in the treatment of multiple sclerosis: Cause for concern? *CNS Drugs, 11*, 225-243 (1999).

42. Cutter, G.R., Baier, M.L., Rudick, R.A., Cookfair, D.L., Fischer, J.S., Petkau, J., Syndulko, K., Weinshenker, B.G., Antel, J.P., Confavreux, C., Ellison, G.W., Lublin, F., Miller, A.E., Rao, S.M., Reingold, S., Thompson, A. & Willoughby, E. (the National Multiple Sclerosis Society's Clinical Outcomes Assessment Task Force). Development of a multiple sclerosis functional composite as a clinical trials outcome measure. *Brain, 122*, 871-882 (1999).

43. Bajorski P. & Petkau, A.J. Nonparametric two-sample comparisons of changes on ordinal responses. *Journal of the American Statistical Association, 94*, 970-978 (1999).

44. Ebelt, S.T., Petkau, A.J., Vedal, S., Fisher, T.V. & Brauer M. Exposure of chronic obstructive pulmonary disease patients to particulate matter: Relationships between personal and ambient air concentrations. *Journal of the Air and Waste Management Association, 50*, 1081-1094 (2000).

45. Paszner, B., Petkau, J. & Oger, J. Impact of antibodies to interferon-β during treatment of multiple sclerosis. In: *Drug Treatment of Multiple Sclerosis,* A. Wagstaff (ed.), Adis International, Auckland, 89-108 (2000).

46. Brauer, M., Ebelt, S.T., Fisher, .T.V., Brumm, J., Petkau, A.J. & Vedal, S. Exposure of chronic obstructive pulmonary disease patients to particles: Respiratory and cardiovascular health effects. *Journal of Exposure Analysis and Environmental Epidemiology, 11*, 490-500 (2001).

47. Brauer, M., Brumm, J., Vedal, S. & Petkau, A.J. Exposure misclassification and threshold concentrations in time series analyses of air pollution health effects. *Risk Analysis, 22*, 1183-1193 (2002).

48. Polman, C., Kappos, L., White, R., Dahlke, F., Beckmann, K., Pozzilli, C., Thompson, A., Petkau, J. & Miller, D., for the European Study Group in Interferon Beta-1b in Secondary Progressive Multiple Sclerosis. Neutralizing antibodies during treatment of secondary progressive multiple sclerosis with interferon beta-1b. *Neurology 60*, 37-43 (2003).

49. Vedal, S., Brauer, M., White, R. & Petkau, J. Air pollution and daily mortality in a city with low pollution concentrations. *Environmental Health Perspectives, 111*, 45-51 (2003).

50. Petkau, A.J. Optimal group sequential designs for the Anscombe-Colton model. In: *Mathematical Statistics and Applications: Festschrift for Constance van Eeden*, M. Moore, S. Froda & C. Leger (eds.), IMS Lecture Notes - Monograph Series, Volume 42, 291-315 (2003).

51. Petkau, A.J. Statistical approaches to assessing the effects of neutralizing antibodies: IFNB-1b in the pivotal trial of relapsing-remitting multiple sclerosis. *Neurology, 61, Supplement 5*, S35-S37 (2003).

52. Petkau, A.J., White, R.A., Ebers, G.C., Reder, A.T., Sibley, W.A., Lublin, F.D., Paty, D.W. & the INFB Multiple Sclerosis Study Group. Longitudinal analyses of the effects of neutralizing antibodies on interferon beta-1b in relapsing-remitting multiple sclerosis. *Multiple Sclerosis, 10*, 126-138 (2004).

53. Vedal, S., Rich, K., Brauer, M., White, R. & Petkau, J. Air pollution and cardiac arrhythmias in patients with implantable cardioverter defibrillators. *Inhalation Toxicology, 16*, 353-362 (2004).

54. Rich, K.E., Petkau, J., Vedal, S. & Brauer M. A case-crossover analysis of particulate air pollution and cardiac arrhythmia in patients with implantable cardioverter defibrillators. *Inhalation Toxicology, 16*, 363-372 (2004).

55. Clayton, M.K. & Petkau, A.J. Evaluation of asymptotic approximations for a two-stage Bernoulli bandit. *Journal of Statistical Planning and Inference, 130*, 133-148 (2005).

56. Altman, R.M. & Petkau, A.J. Application of hidden Markov models to multiple sclerosis lesion count data. *Statistics in Medicine, 24*, 2335-2344 (2005).

57. Barkhof, F., Held, U., Simon, J.H., Daumer, M., Fazekas, F., Filippi, M., Frank, J.A., Kappos, L., Li, D., Menzler, S., Miller D.H., Petkau, J. & Wolinsky J., for the Sylvia Lawry Centre for Multiple Sclerosis Research. Predicting gadolinium enhancement status in MS patients eligible for randomized clinical trials. *Neurology, 65*, 1447-1454 (2005).

58. Li, D.K.B., Held, U., Petkau, J., Daumer, M., Barkhof, F., Fazekas, F., Frank, J.A., Kappos, L., Miller, D.H., Simon, J.H., Wolinsky, J.S. & Filippi, M., for the Sylvia Lawry Centre for Multiple Sclerosis Research. MRI T_2 lesion burden in multiple sclerosis: A plateauing relationship with clinical disability. *Neurology, 66*, 1384-1389 (2006).

59. Tremlett, H., Seemüller, S., Zhao, Y., Yoshida, E.M., Oger, J. & Petkau, J. Liver test abnormalities in multiple sclerosis: Findings from placebo-treated patients. *Neurology, 67*, 1291-1293 (2006).

60. Ghement, I.R., Heckman, N.E. & Petkau, J. Seasonal confounding and residual correlation in analyses of health effects of air pollution. *Environmetrics, 18*, 375-394 (2007).

61. Raffa, J.D., Grebely, J., Tossonian, H., Wong, T., Viljoen, M., Khara, M., Mead, A., McLean, M., Duncan, F., Petkau, A.J., DeVlaming. S. & Conway, B. The impact of ongoing illicit drug use on methadone adherence in illicit drug users receiving treatment for HIV in a directly observed therapy program. *Drug and Alcohol Dependence, 89*, 306-309 (2007).

62. Zhao, Y., Traboulsee, A., Petkau, A.J. & Li, D. Regression of new gadolinium enhancing lesion activity in relapsing-remitting multiple sclerosis. *Neurology, 70*, 1092-1097 (2008).

63. Raffa, J.D., Tossonian, H.K., Grebely, J., Petkau, A.J., DeVlaming, S. & Conway, B. Intermediate highly active antiretroviral therapy adherence thresholds and empirical models for the development of drug resistance mutations. *Journal of Acquired Immune Deficiency Syndromes, 47*, 397-399 (2008).

64. Polman, C.H., Reingold, S.C., Barkhof, F., Calabresi, P.A., Clanet, M., Cohen, J.A., Cutter, G.R., Freedman, M.S., Kappos, L., Lublin, F.D., McFarland, H.F., Metz, L.M., Miller, A.E., Montalban, X., O'Connor, P.W., Panitch, H., Richert, J.R., Petkau, J., Schwid, S.R., Sormani, M.P., Thompson, A,J., Weinshenker B.G. & Wolinsky, J.S. Ethics of placebo-controlled clinical trials in multiple sclerosis: a reassessment. *Neurology, 70*, 1134-1140 (2008).

65. Petkau, J., Reingold, S.C., Held, U., Cutter, G.R., Fleming, T.R., Hughes, M.D., Miller, D.H., McFarland, H.F. & Wolinsky, J.S. Magnetic resonance imaging as a surrogate outcome for multiple sclerosis relapses. *Multiple Sclerosis, 14*, 770-778 (2008).

66. Zhao, Y., Petkau, A.J., Traboulsee, A., Riddehough, A. & Li, D.K.B. Does MRI lesion activity regress in secondary progressive multiple sclerosis? *Multiple Sclerosis, 16*, 434-442 (2010).

67. Basson, R., Brotto, L.A., Petkau, A.J. & Labrie, F. Role of androgens in women's sexual dysfunction. *Menopause, 17*, 962-971 (2010).

68. Polman, C.H., Bertolotto, A., Deisenhammer, F., Giovannoni, G., Hartung, H.P., Hemmer, B., Killestein, J., McFarland, H.F., Oger, J., Pachner, A.R., Petkau, J., Reder, A.T., Reingold, S.C., Schellekens, H. & Soelberg-Sorensen, P. Recommendations for clinical use of data on neutralizing antibodies to interferon-beta therapy in multiple sclerosis. *Lancet Neurology, 9*, 740-750 (2010).

69. Brotto, L.A., Basson, R., Petkau, A.J. & Labrie, F. Predictors of sexual desire disorders in women. *The Journal of Sexual Medicine, 8*, 742-753 (2011).

70. Reingold, S.C., McFarland, H.F. & Petkau, A.J. The growing need for alternative clinical trial designs for multiple sclerosis. Chapter 21 in: *Multiple Sclerosis Therapeutics, 4th edition*, J.A. Cohen & R.A. Rudick (eds), Cambridge University Press, 253-260 (2011).

71. Hartung, H.P., Freedman, M.S., Polman, C.H., Edan, G., Kappos, L., Miller, D.H., Montalbán, X., Barkhof, F., Petkau, J., White, R., Sahajpal, V., Knappertz, V., Beckmann, K., Lanius, V., Sandbrink, R. & Pohl, C., for the BENEFIT Study Group. Interferon-β-1b neutralising antibodies 5 years after clinically isolated syndrome. *Neurology, 77*, 835-843 (2011). Correction: *Neurology, 77*, 1317 (2011).

72. Riddell, C.A., Zhao, Y., Li, D.K.B., Petkau, A.J., Riddehough, A., Cutter, G.R. & Traboulsee, A. Evaluation of safety monitoring guidelines based on MRI lesion activity in multiple sclerosis. *Neurology, 77*, 2089-2096 (2011).

73. Goodin, D.S., Hartung, H.P., O'Connor, P., Filippi, M., Arnason, B., Comi, G., Cook, S., Jeffery, D., Kappos, L., Bogumil, T., Knappertz, V., Sandbrink, R., Beckmann, K., White, R., Petkau, J. & Pohl, C. Neutralizing antibodies to interferon beta-1b in multiple sclerosis: a clinico-radiographic paradox in the BEYOND trial. *Multiple Sclerosis, 18*, 181-195 (2012).

74. Barkhof, F., Simon, J.H., Fazekas, F., Rovaris, M., Kappos, L., de Stefano, N., Polman, C.H., Petkau, J., Radue, E.W., Sormani, M.P., Li, D.K., O'Connor, P., Montalban, X., Miller, D.H. & Filippi, M. MRI monitoring of immunomodulation in relapse-onset multiple sclerosis trials. *Nature Reviews Neurology, 8*, 13-21 (2012).

75. Altman, R.M., Petkau, A.J., Vrecko, D. & Smith, A. A longitudinal model for magnetic resonance imaging lesion count data in multiple sclerosis patients. *Statistics in Medicine, 31*, 449-469 (2012).

76. Shirani, A., Zhao, Y., Karim, M.E., Evans, C., Kingwell, E., van der Kop, M.L., Oger, J., Gustafson, P., Petkau, J. & Tremlett, H. Association between use of interferon beta and progression of disability in patients with relapsing-remitting multiple sclerosis. *Journal of the American Medical Association, 308*, 247-256 (2012).

77. Tremlett, H., Zhu, F., Petkau, J., Oger, J. & Zhao, Y. Natural, innate improvements in multiple sclerosis disability. *Multiple Sclerosis, 18*, 1412-1421 (2012).

78. Altman, R.M., Petkau, J., Vrecko, D. & Smith, A. MRI-based clinical trials in relapsing-remitting multiple sclerosis: New sample size calculations based on a longitudinal model. *Multiple Sclerosis, 18*, 1600-1608 (2012).

79. Zhao, Y., Li, D.K.B., Petkau, A.J., Riddehough, A. & Traboulsee, A. Detection of unusual increases in MRI lesion counts in individual multiple sclerosis patients. *Journal of the American Statistical Association, 109*, 119-132 (2014).

80. Shirani, A., Zhao, Y., Karim, M.E., Petkau, J., Gustafson, P., Evans, C., Kingwell, E., van der Kop, M.L., Oger, J & Tremlett, H. Investigation of heterogeneity in the association between interferon beta and disability progression in multiple sclerosis: an observational study. *European Journal of Neurology, 21*, 835-844 (2014).

81. Lublin, F.D., Reingold, S.C., Cohen, J.A., Cutter, G.R., Soelberg-Sørensen, P., Thompson, A.J., Wolinsky, J.S., Balcer, L.J., Banwell, B., Barkhof, F., Bebo, B., Calabresi, P.A., Clanet, M., Comi, G., Fox, R.J., Freedman, M.S., Goodman, A.D., Inglese, M., Kappos, L., Kieseier, B.C., Lincoln, J.A., Lubetzki, C., Miller, A.E., Montalban, X., O'Connor, P.W., Petkau, J., Pozzilli, C., Rudick, R.A., Sormani, M.P., Stüve, O., Waubant, E. & Polman, C.H. Defining the clinical course of MS: The 2013 revisions. *Neurology, 83*, 278-286 (2014).

82. Karim, M.E., Gustafson, P., Petkau, J., Zhao, Y., Shirani, A., Kingwell, E., Evans, C., van der Kop, M., Oger, J. & Tremlett, H. Marginal structural Cox models for estimating the association between beta-interferon exposure and disease progression in a multiple sclerosis cohort. *American Journal of Epidemiology, 180*, 160-171 (2014).

83. Evans, C., Zhu, F., Kingwell, E., Shirani, A., van der Kop, M.L., Petkau, J., Gustafson, P., Zhao, Y., Traboulsee, A., Oger, J. & Tremlett, H. Association between beta-interferon exposure and hospital events in multiple sclerosis. *Pharmacoepidemiology and Drug Safety, 23*, 1213-1222 (2014).

84. Dong, J., Zhao, Y., Petkau, A.J., Li, D.K.B., Riddehough, A. & Traboulsee, A. Further investigation of safety monitoring guidelines based on magnetic resonance imaging lesion activity in multiple sclerosis clinical trials. *Multiple Sclerosis, 21*, 101-104 (2015).

85. Zhang, T., Shirani, A., Zhao, Y., Karim, M.E., Gustafson, P., Petkau, J., Evans, C., Kingwell, E., van der Kop, M., Zhu, F., Oger, J., Tremlett, H., & BC MS Clinic Neurologists. Beta-interferon exposure and onset of secondary progressive multiple sclerosis. *European Journal of Neurology, 22*, 990-1000 (2015).

86. Zhao, Y., Kondo, Y., Traboulsee, A., Li, D.K.B., Riddehough, A. & Petkau, A.J. Personalized activity index, a new safety monitoring tool for multiple sclerosis clinical trials. *Multiple Sclerosis Journal - Experimental, Translational and Clinical, 1*, 15 pages, doi:10.1177/2055217315577829 (2015).

87. Kondo, Y., Zhao, Y. & Petkau, J. A flexible mixed-effect negative binomial regression model for detecting unusual increases in MRI lesion counts in individual multiple sclerosis patients. *Statistics in Medicine, 34*, 2165-2180 (2015).

88. Shirani, A., Zhao, Y., Petkau, J., Gustafson, P., Karim, M.E., Evans, C., Kingwell, E., van der Kop, M.L., Oger, J. & Tremlett, H. Multiple sclerosis in older adults: the clinical profile and impact of interferon beta treatment. *BioMed Research International, 2015,* article ID 451912, 11 pages, doi:10.1155/2015/451912 (2015).

89. Reich, D.S., White, R., Cortese, I.C.M., Vuolo, L., Shea, C.D., Collins, T.L. & Petkau, J. Sample-size calculations for short-term proof-of-concept studies of tissue protection and repair in multiple sclerosis lesions via conventional clinical imaging. *Multiple Sclerosis, 21*, 1693-1704 (2015).

90. Hartung, H.P., Kappos, L., Goodin, D.S., O'Connor, P., Filippi, M., Arnason, B., Comi, G., Cook, S., Jeffery, D., Petkau, J., White, R., Bogumil, T., Beckmann, K., Stemper, B., Suarez, G., Sandbrink, R. & Pohl, C., on behalf of the BEYOND Study Group. Predictors of disease activity in 857 patients with MS treated with interferon beta-1b. *Journal of Neurology, 262*, 2466-2471 (2015).

91. Riddell, C., Zhao, Y. & Petkau, J. An adaptive clinical trials procedure for a sensitive subgroup examined in the multiple sclerosis context. *Statistical Methods in Medical Research, 25*, 1330-1345 (2016).

92. Karim, M.E., Gustafson, P., Petkau, J., Tremlett, H. & the Long-Term Benefits and Adverse Events of Beta-Interferon for Multiple Sclerosis (BeAMS) Study Group. Comparison of statistical approaches for dealing with immortal time bias in drug effectiveness studies. *American Journal of Epidemiology, 184*, 325-335 (2016).

93. Zhang, T., Kingwell, E., DeJong, H.J.I., Zhu, F., Zhao, Y., Carruthers, R., Petkau, J., Gustafson, P., Oger, J. & Tremlett, H. Association between the use of selective serotonin reuptake inhibitors and multiple sclerosis disability progression. *Pharmacoepidemiology and Drug Safety, 25*, 1150-1159 (2016).

94. Karim, M.E., Petkau, J., Gustafson, P., Tremlett, H. & the BeAMS Study Group. On the application of statistical learning approaches to construct inverse probability weights in marginal structural Cox models: Hedging against weight-model misspecification. *Communications in Statistics – Simulation and Computation, 46*, 7668-7697 (2017).

95. Kondo, Y., Zhao, Y. & Petkau, J. Identification of treatment responders based on multiple longitudinal outcomes with applications to multiple sclerosis patients. *Statistics in Medicine, 36*, 1862-1883 (2017).

96. de Jong, H.J.I., Kingwell, E., Shirani, A., Cohen-Tervaert, J.W., Hupperts, R., Zhao, Y., Zhu, F., Evans, C., van der Kop, M.L., Traboulsee, A., Gustafson, P., Petkau, J., Marrie, R.A. & Tremlett, H. (on behalf of the British Columbia Multiple Sclerosis Clinic Neurologists). Evaluating the safety of beta-interferons in multiple sclerosis: A series of nested case-control studies. *Neurology, 88*, 2310-2320 (2017).

97. Högg, T., Petkau, J., Zhao, Y., Gustafson, P., Wijnands, J.M.A. & Tremlett, H. Bayesian analysis of pair-matched case-control studies subject to outcome misclassification. *Statistics in Medicine, 36*, 4196-4213 (2017).

98. Zhang, T., Kingwell, E., Zhu, F., Petkau, J., Kastrukoff, L.F., Marrie, R.A., Tremlett, H. & Evans, C. Effects of adherence to the first-generation injectable immunomodulatory drugs on disability accumulation in multiple sclerosis: a longitudinal cohort study. *British Medical Journal Open, 7,* article ID e018612, 7 pages, doi:10.1136/bmjopen-2017-018612 (2017).

99. Karim, M.E., Petkau, J., Gustafson, P., Platt, R.W., Tremlett, H. & the BeAMS Study Group. Comparison of statistical approaches dealing with time-dependent confounding in drug effectiveness studies. *Statistical Methods in Medical Research, 27*, 1709-1722 (2018).

100. Kingwell, E., Leray, E., Zhu, F., Petkau, J., Edan, G., Oger, J. & Tremlett, H. Multiple sclerosis: Effect of beta-interferon treatment on survival. *Brain, 142*, 1324-1333 (2019).

101. Högg, T., Zhao, Y., Gustafson, P., Petkau, J., Fisk, J., Marrie, R.A. & Tremlett, H. Adjusting for differential misclassification in matched case-control studies utilizing health administrative data. *Statistics in Medicine, 38*, 3669-3681 (2019).

102. Sadatsafavi, M., McCormack, J., Petkau, J., Lynd, L.D., Lee, T.Y. & Sin, D.D. Should the number of acute exacerbations in the previous year be used to guide treatments in COPD? *European Respiratory Journal, 57*, 2002122, 8 pages, doi:10.1183/13993003.02122-2020 (2021).

103. Karim, M.E., Tremlett, H., Zhu, F., Petkau, J. & Kingwell, E. Dealing with treatment-confounder feedback and sparse follow-up in longitudinal studies: application of a marginal structural model in a multiple sclerosis cohort. *American Journal of Epidemiology, 190*, 908–917 (2021).

104. Yik, J.T., Becquart, P., Gill, J., Petkau, J., Traboulsee, A., Carruthers, R., Kolind, S.H., Devonshire, V., Sayao, A.L., Schabas, A., Tam, R., Moore, G.R.W., Li, D.K.B., Stukas, S., Wellington, C., Quandt, J.A., Vavasour, I.M. & Laule, C. Serum neurofilament light chain correlates with myelin and axonal magnetic resonance imaging markers in multiple sclerosis. *Multiple Sclerosis and Related Disorders, 57*, article ID 103366, 13 pages, doi:10.1016/j.msard.2021.103366 (2022).

105. Sadatsafavi, M., Saha-Chaudhuri, P. & Petkau, J. Model-based ROC curve: examining the effect of case-mix and model calibration on the ROC plot. *Medical Decision Making, 42*, 487-499 (2022).

106. Lee, T.Y., Petkau, J. & Sadatsafavi, M. Long-term natural history of severe asthma exacerbations and their impact on the disease course. *Annals of the American Thoracic Society, 19,* 907-915 (2022).

107. Simoneau, G., Pellegrini, F., Debray, T.P.A., Rouette, J., Muñoz, J., Platt, R.W., Petkau, J., Bohn, J., Shen, C., de Moor, C. & Karim, M.E. Recommendations for the use of propensity score methods in multiple sclerosis research. *Multiple Sclerosis*, *28*, 1467-1480 (2022).

108. Lee, T.Y., Petkau, J., Mangat, N., Safari, A., Cragg, J.J., Lynd, L.D., FitzGerald, J.M., Turvey, S.E. & Sadatsafavi, M. 16-year trends in asthma hospital admissions in Canada. *Annals of Allergy, Asthma and Immunology, 129*, 475-480 (2022).

109. Safari, A., Petkau, J., FitzGerald, M.J. & Sadatsafavi, M. A parametric model to jointly characterize rate, duration and severity of exacerbations in episodic diseases. *BMC Medical Informatics and Decision Making, 23*, article 6, 11 pages, doi:10.1186/s12911-022-02080-5 (2023).

110. Sadatsafavi, M. & Petkau, J. Non-parametric inference on calibration of predicted risks. *Statistics in Medicine, 43*, 3524-3538 (2024).

111. Lee, T.Y., Petkau, J., Saatchi, A., Marra, F., Turvey, S.E., Lishman, H., Patrick, D.M., Cragg, J.J., Johnson, K.M., & Sadatsafavi, M. Impact analysis of infant antibiotic exposure on the burden of asthma: a simulation modeling study. *Frontiers in Allergy*, *5*, article 1491985, 12 pages, doi: 10.3389/falgy.2024.1491985 (2024).

112. Kempf, G., Ng, H.S., Petkau, J., Tremlett, H., Zhu, F. & Zhao, Y. Multi-state modelling in long-term follow-up studies, with application to a multiple sclerosis cohort. *Journal of Clinical Epidemiology*, published online April 27, 2025.

II. OTHER

1. Letters to the Editor:

(a) Petkau, A.J. A fundamental question of practical statistics. *The American Statistician, 32*, 114 (1978).

(b) Cover, K.S., Petkau, J., Li, D.K.B. & Paty, D.W. Lesion load reproducibility and statistical sensitivity of clinical trials in multiple sclerosis. *Neurology, 52*, 433-434 (1999).

(c) Polman, C.H., Kappos, L., Petkau, J. & Thompson, A. Neutralising antibodies to interferon beta during the treatment of multiple sclerosis. *Journal of Neurology, Neurosurgery and Psychiatry, 74*, 1162 (2003).

(d) Polman, C., Kappos, L., White, R., Dahlke, F., Beckmann, K., Pozzilli, C., Thompson, A., Petkau, J. & Miller, D. Neutralising antibodies during treatment of secondary progressive multiple sclerosis with interferon beta-1b. *Neurology, 61*, 1025 (2003).

(e) Petkau, A.J., Ebers, G.C. & Reder, A.T. Longitudinal analyses of the effects of neutralizing antibodies on interferon beta-1b in relapsing/remitting multiple sclerosis. *Multiple Sclerosis, 10*, 715 (2004).

(f) Shirani, A., Petkau, J. & Tremlett, H. Treatment with interferon beta for multiple sclerosis. *Journal of the American Medical Association, 308*, 1627-1628 (2012).

(g) Shirani, A., Zhao, Y., Karim, M.E., Evans, C., Kingwell, E., van der Kop, M.L., Oger, J., Gustafson, P., Petkau, J. & Tremlett, H. Interferon beta and long-term disability in multiple sclerosis. *JAMA Neurology, 70*, 651-652 (2013).

(h) Karim, M.E., Gustafson, P., Petkau, J. & Tremlett, H. Comparison of statistical approaches for dealing with immortal time bias in drug effectiveness studies. *American Journal of Epidemiology, 184*, 857-858 (2016).

(i) Shirani, A., Zhao, Y., Karim, M.E., Kingwell, E., Petkau, J., Gustafson, P. & Tremlett, H. Observational studies of disease modifying therapies for multiple sclerosis: Methodological challenges and opportunities. *British Medical Journal, 354*, i3518 (2016).

(j) Karim, M.E., Petkau, J., Gustafson, P. & Platt, R.W. Comparison of statistical approaches dealing with time-dependent confounding in drug effectiveness studies. *Statistical Methods in Medical Research, 28*, 323-324 (2019).

2. Discussions:

(a) Statistical problems in environmental research, by J.W. Ware & T. A. Louis. *Canadian Journal of Statistics, 11*, 69-70 (1983).

(b) Problems of and approaches to analysing large data sets, Session No.17, 46th Session of the ISI, Tokyo, 1987. *Bulletin of the International Statistical Institute, 52-3*, 453-455 (1987).

3. Book Reviews:

(a) *Mathematical Methods for Digital Computers, Vol. III: Statistical Methods for Digital Computers* by K. Enslein, A. Ralston & H.S. Wilf, eds. *JASA, 72*, 931-932 (1977).

(b) *Applied Statistics for Science and Industry* by A. Romano. *JASA, 73*, 684-685 (1978).

(c) *Optimal Stopping Rules* by A.N. Shirayev. *JASA, 74*, 735-736 (1979).

(d) *Statistical Analysis: A Computer Oriented Approach* (2nd edition) by A.A. Afifi & S.P. Azen. *JASA, 75*, 1041 (1980).

4. NSERC Reports:

(a) *State-of-the-Discipline Report (GSC 14)*: Prepared as Chair of the 1989-90 NSERC Statistical Sciences Grant Selection Committee. Abridged version published as: Statistical Sciences in Canada, *Liaison, 5*, 25-30 (1991).

(b) *Reallocations Brief for the Statistical Sciences (GSC 14)*: Participated in preparation as Chair of the Steering Committee for the Statistical Sciences. Submitted to NSERC in December 2001.

5. Major Consulting Reports:

(a) Statistical appendix (Appendix B) to: Cost of Production for Eggs in Western Canada. Report prepared by Foodwest Resource Consultants and Jarrett, Goold & Elliott, Chartered Accountants under contract with the Manitoba, Saskatchewan, Alberta and British Columbia Egg Marketing Boards (March 1981).

(b) Statistical appendix (Appendix C) to: A Provincial Cost of Production Model for Canadian Chicken Producers. Report prepared by Foodwest Resource Consultants and Jarrett, Goold & Elliott, Chartered Accountants under contract with the Canadian Chicken Marketing Agency (May 1981).

(c) Statistical appendix (Appendix A) to: Review of the 1981 Cost of Production Study: Phases I and II. Report prepared by Price Waterhouse Associates under contract with the Canadian Turkey Marketing Association (August 1983).

(d) Review of Documents Relating to the Inquiry Into Log Scaling at Shoal Island. Report prepared under contract with the Ministry of Forests, Province of British Columbia (February 1985).

(e) Environmental Monitoring: Models, Network Design and Data Analysis (with P. Guttorp, P.D. Sampson & J.V. Zidek). Report prepared under contract with the Health Protection Branch, Department of National Health and Welfare (October 1986). Also issued as SIMS Technical Report #107, Department of Statistics, UBC (February 1987).

(f) Air Pollution and Human Health: A Study Based on Hospital Admissions Data From Prince George, British Columbia (with K. Knight, B. Leroux & J. Millar). Report prepared under contract with the Health Protection Branch, Department of National Health and Welfare (December 1988). Also issued as SIMS Technical Report #128, Department of Statistics, UBC (February 1989).

(g) Air Pollution and Human Health: A Study Based on Emergency Room Visits Data from Prince George, British Columbia (with K. Knight, B. Leroux & J. Millar). Report prepared under contract with the Health Protection Branch, Department of National Health and Welfare (April 1989). Also issued as SIMS Technical Report #136, Department of Statistics, UBC (June 1989).

(h) Air Pollution and Human Health: A Follow-Up Study Based on Emergency Room Visits Data from Prince George, British Columbia (with B. McNeney). Report prepared under contract with the B.C. Ministry of Health (September 1991).

(i) Post-Stratification of a Stratified Random Sample. Report prepared under contract with the B.C. Ministry of Forests (July 1993).

(j) Preliminary Sample Size Calculations for Proposed Serono Study GF7999 in Relapsing-Remitting Multiple Sclerosis. Report prepared under contract with The Ares-Serono Group, Geneva (November 1994).

(k) Tentative Sample Size Calculations for 6-Month Frequent MRI Sub-Study of Schering Study 93.079 in Secondary Progressive Multiple Sclerosis. Report prepared under contract with Schering AG, Berlin (March 1995).

(l) Longitudinal Analyses for the UBC 6-Weekly Frequent MRI Sub-Study of the Betaserion Multiple Sclerosis Trial in Relapsing-Remitting Multiple Sclerosis (with R. White). Report prepared under contract with Berlex Laboratories, Richmond, California (May 1995). Also issued as Biostatistics Research Report #10, Biostatistics Research Group, UBC (October 1995).

(m) Neutralizing Antibodies and the Efficacy of Interferon Beta-1b in Relapsing-Remitting Multiple Sclerosis (with R. White). Report prepared under contract with Berlex Laboratories, Richmond, California (April 1997). Also issued as Biostatistics Research Report #12, Biostatistics Research Group, UBC (June 1997).

(n) Sensitivity Analyses for the GEE Approach to the Longitudinal EDSS Data in the Betaseron Pivotal Trial (with Y. D'yachkova). Report prepared under contract with Berlex Laboratories, Richmond, California (October 1997).

(o) Longitudinal Analyses of the Relationships Between Neutralizing Antibodies and the Efficacy of Interferon Beta-1b in Schering's Study # 93.079 of Secondary Progressive Multiple Sclerosis (with R. White). Report prepared under contract with Berlex Laboratories, Richmond, California (June 1998). Supplementary reports prepared under contract with Schering AG, Berlin (September 1998, May 2003).

(p) Cross-sectional Analyses of Dose-Response Relationships for Selected Clinical and MRI Outcome Measures in Serono Studies #6789 (PRISMS) and #7999 (OWIMS) (with R. White). Report prepared under contract with the Ares-Serono Group, Geneva (January 1999). Supplementary reports (March 1999, January 2000, March 2000).

(q) Correlations Between Selected Clinical and MRI Outcome Measures in the Overall Cohort of Serono Study #6789 (PRISMS). Report #1: EDSS Scores and Exacerbation Rates versus T_2 Burden of Disease (with M. Salibian-Barrera and H. Wong, March 1999). Report #2: EDSS Scores and Exacerbation Rates versus T_2 Active Lesion Rates (with M. Salibian-Barrera and H. Wong, May 1999). Reports prepared under contract with the Ares-Serono Group, Geneva.

(r) The Role of Baseline Covariates in Serono Study #6789 (PRISMS). Report #1: Treatment by Baseline Covariate Interactions for Selected Clinical Outcomes (with R. White, April 1999). Report #2: Analysis of Baseline Covariates as Predictors of Outcome in the Placebo Group (with A. Smith, May 1999). Report #3: Treatment by Baseline Covariate Interactions for Selected Clinical Outcome Measures for the Frequent MRI Cohort (with R. White, April 2000). Report #4: Clinical versus MRI Outcome Measures for the Frequent MRI Cohort (with R. White, April 2000). Reports prepared under contract with the Ares-Serono Group, Geneva.

(s) Air Pollution and Human Health: A Study Based on Emergency Room Visits Data from Prince George, British Columbia (with J. Ahkong and B.M.G. Kibria). Report prepared under contract with the Northern Interior Regional Health Board. Also issued as Technical Report #190, Department of Statistics, UBC (February 2000).

(t) Longitudinal Analyses of Relationships Between Neutralizing Antibodies and the Efficacy of Interferon Beta-1b in Schering's Open Label Follow-Up to Study # 93.079 of Secondary Progressive Multiple Sclerosis (with R. White). Report prepared under contract with Schering AG, Berlin (July 2000). Supplementary report (August 2003).

(u) Longitudinal Analyses of Relationships Between Neutralizing Antibodies and the Efficacy of Interferon Beta-1b in Berlex's North American Trial of Secondary Progressive Multiple Sclerosis (with R. White). Report prepared under contract with Schering AG, Berlin (August 2000). Supplementary reports (July 2003, February 2004).

(v) The Impact of Mouse Neutralization Antibody Status on the Efficacy of Botulinum Toxin Type B in Studies AN072-401CDEU and AN072-402CD (with R. White). Report prepared under contract with Solstice Neurosciences, Malvern (May 2008).

(w) Longitudinal Analyses of the Impact of Neutralizing Antibodies on the Efficacy of Interferon Beta-1b in the BEYOND Study (with R. White). Report prepared under contract with Bayer-Schering Pharma AG, Berlin (October 2008). Supplementary reports (November 2008, December 2008). Final Report (March 2009).

(x) Longitudinal Analyses of the Impact of Neutralizing Antibodies on the Efficacy of Interferon Beta-1b in the BENEFIT Study (with R. White). Report prepared under contract with Bayer-Schering Pharma AG, Berlin (November 2008). Supplementary reports (November 2008). Final Report (March 2009).

(y) Prediction of "Later-in-Study" Responses in BENEFIT 250 Early Arm (with R. White). Reports prepared under contract with Bayer-Schering Pharma AG, Berlin (July 2010, August 2010, November 2010). Supplementary reports (November 2010, May 2011, September 2011).

(z) Prediction of Post-Year 1 Responses in BEYOND 250 and 500 Arms (with R. White). Reports prepared under contract with Bayer-Schering Pharma AG, Berlin (June 2010, August 2010, September 2010). Supplementary reports (May 2011, July 2011, August 2011).

(aa) The Sensitivity of Different Lesion-Specific Responses in the Reich NIH Data Set: Implications for the Design of a Phase 2 Clinical Trial (with R. White). Report prepared under contract with Myelin Repair Foundation, Saratoga (March 2013). Supplementary reports (April 2013, May 2013, August 2013, September 2013, April 2014).

(ab) Comments on Statistical Aspects of the GATE Study. Report prepared under contract with Teva Pharmaceuticals Europe (September 2016).

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