

Dr. Leonard MacLean, PH.D
Canmac Economics Limited Associate



Education

- Dalhousie University, Ph.D., Mathematics, Doctoral Thesis: "Optimal Economic Growth"
- Dalhousie University, M.A., Mathematics, Masters Thesis: "Noncooperative Bimatrix Games"
- St. Francis Xavier University, B.Ed.
- St. Francis Xavier University, B.A., Mathematics, Bachelors Thesis: "Number Theory"

Work Experience

- Associate Dean of Research, Dalhousie Business School, Halifax, Nova Scotia
- Professor, School of Business Administration, Dalhousie University, Halifax, Nova Scotia
- Director of Research, Canmac Economics, Halifax, Nova Scotia
- Affiliate Professor, Royal Roads University, Victoria, British Columbia

1995/1997 - Visiting Professor, Faculty of Commerce and Business Administration, University of British Columbia, Vancouver, British Columbia

1989/1995 - Director, School of Business Administration, Dalhousie University, Halifax, Nova Scotia

1984/1985 - Director of Health Services Research Unit, Department of Community Health and Epidemiology, Dalhousie University, Halifax, Nova Scotia.

1985 (Jan-June) - Visiting Professor, Faculty of Commerce and Business Administration, University of British Columbia, Vancouver, British Columbia

1982 (Mar-Dec) - Visiting Professor, Department of Business Studies, University of Zimbabwe, Harare, Zimbabwe

1980 (Jul-Aug) - Visiting Professor, Department of Mathematics and Statistics, Simon Fraser University, Burnaby, British Columbia

Publications

- Foster, M. and MacLean L. The Capital Growth and CAPM Approaches to Calculating Risk Premiums. Working Paper, Faculty of Commerce, Saint Mary's University (2000)
- MacLean, L.C., A. Richman and K.L. Weldon. System Degeneration and Repair: Modelling Health Status. Working Paper 99-04, School of Business Administration, Dalhousie University, 1999. 17 pgs.
- MacLean, L.C., A. Richman, and K.L. Weldon. A Dynamic Model for Population Health. Working Paper 99-03, School of Business Administration, 1999. 15 pgs. (To be submitted to Health Services Research.
- MacLean, L.C., W.T. Ziemba and Y. Li. Time to Wealth Goals in Capital Accumulation. 1999. 22 pgs. (Submitted to Journal of Finance.)
- MacLean, L.C., A. Richman. Resource Absorption in Health Maintenance Systems. 1999. 31 pgs. (Submitted to Health Care Management Science.)
- MacLean, L.C., and W.T. Ziemba. Efficiency Concepts in Capital Accumulation Models. Phil. Trans. R. Soc. A, 357 (1999), p. 2029-2037.
- MacLean, L.C. and A. Richman. Cost versus Reliability in Aircraft Maintenance. Proceedings of the Sciences and Engineering Section, American Statistical Association Joint Meetings, Baltimore, 1999.
- MacLean, L.C. and A. Richman. Cost Effectiveness in Aircraft Maintenance. Note in Air Safety Week, October, 1999.
- MacLean, L.C. and W.T. Ziemba. Growth versus Security in Dynamic Investment Analysis. Annals of Operations Research. 85 (1999), 193-225.
- MacLean, L.C. and A. Richman. The Efficiency of Aircraft Maintenance Programs. Handbook of Airline Finance. McGraw-Hill, New York, 1998, p. 585-592.
- MacLean, L.C., W.T. Ziemba and Y. Zhao. Capital Growth with Security. Rejected by Operations Research. Under revision (additional computations) for resubmission.
- MacLean, L.C., and Weldon, K.L., Estimation of multivariate random effects without replication. Communications in Statistics 25:7, 1996, pp. 1447-1469.
- MacLean, L.C., Ziemba, W.T., and Blazenko, G., Growth versus security in dynamic investment analysis. Management Science 38.11 (November 1992).
- MacLean, L.C., and Ziemba, W.T., Growth-security profiles in capital accumulation under uncertainty, Annals of Operations Research 81 (1991).
- MacLean, L.C., and Richman, A., Service profile variations, Proceedings of the American Statistical Association (1990).
- MacLean, L.C., and Ziemba, W.T., Balancing growth and security, In: Computing for Control Systems, (ed. P. Borne, et. Al.), J.C. Baltzer, AG Scientific Publishing Co. (1989), pp. 417-419.
- MacLean, L., and Richman, A., Physician practice style variations, Socio-Economic Planning Sciences, 23.6 (1989), 361-371.
- MacLean, L., Richman, A., and Garner, B., Adaptive decisions in the use of hospital beds, Health Services Research 21.6 (1987).
- Sutherland, W.R.S., and MacLean, L.C., Sensitivity analysis of optimal growth plans, Journal of Economics, 21:6 (1987), 741-755.

- MacLean, L.C., and Weldon, K.L., Bayes Estimation of Factor Scores, Proceedings of the American Statistical Association, 1988.
- MacLean, L.C., and Ziemba, W.T., Growth versus security in a risky investment model, in Stochastic Programming, (ed. F. Archetti, G. DiPillo, and M. Lucertini), Lecture Notes in Control and Information Sciences, 76, Springer-Verlag (1986), 78-88.
- MacLean, L.C., and Ziemba, W.T., Expected values versus probability of ruin strategies, in Stochastic Optimization, (ed. V. Arkin, A. Shiracov, R. Wets), Lecture Notes in Control and Information Sciences, 81, Springer-Verlag (1985), 448-457.
- MacLean, L.C., and Sutherland, W.R.S., A nonlinear planning model with borrowing, Utilitas Mathematica, 28 (1985), 19-29.
- MacKay, R.C., Storey, R.G., and MacLean, L.C., Job design for staff nurses: Different jobs for different nurses, Nursing Management (1985), 76-80.
- Coffey, W.J., MacLean, L.C., and Goodchild, M., Randomness and order in the topology of settlement systems, Journal of Economic Geography, 58, 1982, 20-29.
- MacLean, L.C., Field, C.A., and Sutherland, W.R.S., Optimal growth and uncertainty: the borrowing models, Journal of Economic Theory, 24.2, April 1981, 168-187.
- MacLean, L.C., Lagrange multipliers for chance constrained programs, Methods of Operations Research, 41, 1980.
- Brown, M.G., and MacLean, L.C., Computerized ECG interpretation: Technological change for the masses. In: Optimization of computer – ECG Processing, (ed. H. Wolf and P. MacFarlane), North Holland, 1980.
- MacLean, L.C., and Weldon, K.L., Self sufficiency in a regional hospital system, Health Services Research, Fall, 1977, 511-522.
- Gordon, P.O., Weldon, K.L., and MacLean, L.C., Trends in the frequency of selected surgical procedures, N.S. Medical bulletin, 54, February, 1975, 191-195.
- MacLean, L.C., Weldon, K.L., and Gordon, P.C., Trends in hospital beds in Nova Scotia: Current supply and future needs, N.S. bulletin, 53, February, 1974, 3-12.
- Gordon, P.C., Weldon, K.L., and MacLean, L.C., Trends in hospital utilization in Nova Scotia, N.S. Bulletin, 53, 1974.
- Foster, M.E., and MacLean, L. C., An Evaluation of the Strait of Canso Subsidiary Agreement, Report to Department of Regional Industrial Expansion, June, 1985.
- MacLean, L.C., The Health Service System in Nova Scotia: A Physician Perspective, Report to Nova Scotia Medical Society for the Federal Task Force on Resource Association, January, 1984.
- Storey, R.G., MacLean, L.C., et. al., Turnover of Staff Nurses in Nova Scotia: Causes and Remedies, Queens Printer, Nova Scotia, July, 1981, 201 pp.
- MacLean, L.C., and Duffy, J.F., An Experiment in Coeducational Venturing, a report to the Girls in Scouting task group, March 1981.
- MacLean, L.C., and Weldon, K.L., Household Distribution in the Rural Areas of the Atlantic Provinces, Government Studies Program, Dalhousie University, July 1978. (Technical report to the Department of Communications, Government of Canada).
- Weldon, K.L., and MacLean, L.C., Atlantic Region Demographic Study, Government Studies Program, Dalhousie University, July 1977. (Technical report to the Department of communications, Government of Canada).

- MacLean, L.C., and Pereira, L., A Compendium of Health Indices, Department of Preventive Medicine, Dalhousie University, 1974. (This 18 volume series contains profiles of the counties of Nova Scotia).
- MacLean, L.C., Gassmann, H.I., and Larsson, S.O., STAT: Programmed Tutorials in Statistics, Courseware Development Project, School of Business, Dalhousie University, 1988.
- Gassmann, H.I., and MacLean, L.C., Computerized Exercises in Statistics, Courseware Development Project, School of Business, Dalhousie University, 1988.
- Numerous presentations at national and international conferences. Presentations in the most recent 3 years:
 - Title: Cost versus Reliability in Aircraft Maintenance, Conference: American Statistical Association Meeting, Baltimore, Aug. 1999.
 - Title: Time to Wealth Goals in Capital Accumulation Conference: Workshop on Applications of Planning under Uncertainty, Electric Power Research Institute, Pao Alto, July 1999.
 - Title: Growth versus Security in Dynamic Investment Analysis, Conference: High Performance Computing for Financial Planning, Ischia, Italy, April, 1999.
 - Title: Growth-Security Tradeoffs in Dynamic Investment Analysis, Conference: VII International Conference on Stochastic Programming, Vancouver, August, 1998.
 - Title: Modelling UEL's in commercial Aircraft, Conference: INFORMS, Montreal, April, 1998.
 - Title: Capital Growth with Minimum Expected Time Criteria, Conference: European Working Group on Financial Modelling, Venice, Italy, Oct., 1997.
 - Title: A Dynamic Model for Health Status, Conference: INFORMS, Los Angeles, April, 1997.

Teaching Experience

- **Undergraduate Commerce**
 - Statistics for Business and Economics I and II
 - Operations Research
 - Operations and Logistics Management
- **Undergraduate Mathematics**
 - Introduction to Statistics
- **Undergraduate Medicine**
 - Statistics for Medicine
- **Graduate Business**
 - Quantitative Decision Analysis
 - Operations Research
 - Advanced Operations Research
 - Applied Multivariate Analysis
 - Linear Statistical Models
 - Time Series Analysis
- **Graduate Medical Science**
 - Biostatistics