Curriculum Vitae - Tim Swartz (updated Spring 2024)

Personal Details:

- Address: Department of Statistics and Actuarial Science, Simon Fraser University, 8888 University Drive, Burnaby BC, Canada V5A 1S6

- Email: tim@stat.sfu.ca

Academic History:

- Professor - Department of Statistics and Actuarial Science, Simon Fraser University, 2001-present

- Associate Professor - Department of Mathematics and Statistics, Simon Fraser University, 1994-2001

- Assistant Professor - Department of Mathematics and Statistics, Simon Fraser University, 1993-1994

- College Professor - Department of Mathematics and Statistics, Okanagan University College, 1992-1993

- Assistant Professor - Department of Mathematics and Statistics, Simon Fraser University, 1986-1992

Education:

- Ph.D. - Statistics - University of Toronto, 1986

- M.Sc. - Statistics - University of Toronto, 1983

- B.Math. - Statistics/Computer Science - University of Waterloo, 1982

Research Interests:

- statistical computing, Bayesian methods/applications, sports analytics

Significant Research Funding:

- NSERC Research grant - $24,000 per year, 2024-2028
- CANSSI CRT in Sports Analytics - $200,000, 2021-2024
- NSERC Research grant - $34,014 per year, 2019-2023
- NSERC Research grant - $18,000 per year, 2014-2018
- NSERC Research grant - $16,000 per year, 2009-2013
- NSERC Research grant - $22,000 per year, 2004-2008
- NSERC Research grant - $17,000 per year, 2000-2003
- NSERC Research grant - $12,600 per year, 1996-1999
- NSERC Research grant - $6,000 per year, 1993-1995
- NSERC Research grant - $8,460 per year, 1990-1992
- NSERC Research grant - $8,433 per year, 1987-1989
- President's Research grant (SFU) - $2,339, 1986-1987

Awards:

- 2022 8th Chance Sports Silk Sports Awards for sports excellence and contribution to the USJ Statistics in Sport Research Group

- 2019 elected Fellow of the American Statistical Association, with citation "For pioneering work in Statistics in sport; for significant contributions to Bayesian computation and applications; for service to the profession including distance education and the development of Statistics in Sri Lanka"

- 2015 Significant Contributor to Statistics in Sports awarded at the Joint Statistical Meetings in Seattle

- 2008 Jacob Wolfowitz Prize for Theoretical Advances in the Mathematical and Management Sciences for the paper "Bayesian Analysis of Dyadic Data"

Books:

- Swartz, T.B. (2022). *Introduction to Probability and Statistics, Third Edition.* Course Pack, Simon Fraser University.

- Albert, J., Glickman, M., Koning, R. and Swartz, T.B. (editors) (2017). *Handbook of Statistical Methods and Analyses in Sports*, Chapman & Hall/CRC handbooks of modern statistical methods: Boca Raton.

- Swartz, T.B. (2014). *Introduction to Probability and Statistics, Second Edition.* Pearson Learning Solutions, Boston.

- Swartz, T.B. (2011). *Introduction to Probability and Statistics.* Pearson Learning Solutions, Boston.

- Peiris, S., Banneheka, S.G., Tilakaratne, C.D., Swartz, T.B. and Ganeshalingam, S. (editors) (2011). *Proceedings of the International Statistics Conference 2011 - Statistical Concepts and Methods for the Modern World.* Waters Edge, Battaramulla, Sri Lanka.

- Evans, M. and Swartz, T.B. (2000). *Approximating Integrals via Monte Carlo and Deterministic Methods.* Oxford University Press, Oxford.

Research Papers:

1. Wu, L. and Swartz, T.B. (2024). A new metric for pitch control based on an intuitive motion model. *Computational Statistics*, To appear.

2. Guan, T., Sarkar, S. and Swartz, T.B. (2024). Comparison of individual playing styles in football. *Journal of Quantitative Analysis in Sports*, To appear.

3. Epasinghege Dona, N., Gill, P.S. and Swartz, T.B. (2024). What does rally length tell us about player characteristics in tennis? *Journal of the Royal Statistical Society, Series A*, https://doi.org/10.1093/jrsssa/qnae027

4. Kumagai, B., Moreau, R., Kroetch, K. and Swartz, T.B. (2024). Dynamic prediction of the National Hockey League draft with rank-ordered logit models. *International Journal of Forecasting*, https://doi.org/10.1016/j.ijforecast.2024.02.003

5. Guan, T. and Swartz, T.B. (2024). Acceleration and age in soccer. *International Journal of Sports Science and Coaching*, 19(3), 1035-1041.

6. Peng, K., Brodie, R.T., Clarke, D.C. and Swartz, T.B. (2024). Bayesian inference for the impulse-response model of athletic training and performance. *International Journal of Performance Analysis in Sport*, 24(1), 74-89.

7. Epasinghege Dona, N. and Swartz, T.B. (2024). Causal analysis of tactics in soccer: The case of throw-ins. *IMA Journal of Management Mathematics*, 35(1), 111-126.

8. Swartz, T.B. (2023). Causal problems involving football strategy. *10th MathSport International Conference 2023*, Corvinus University of Budapest, Budapest, Hungary, 30-34.

9. Guan, T., Cao, J. and Swartz, T.B. (2023). Parking the bus. *Journal of Quantitative Analysis in Sports*, 19(4), 263-272.

10. Wu, Y. and Swartz, T.B. (2023). Evaluation of off-the-ball actions in soccer. *Statistica Applicata - Italian Journal of Applied Statistics*, 35(2), Article 2.

11. Epasinghege Dona, N. and Swartz, T.B. (2023). A causal investigation of pace of play in soccer. *Statistica Applicata - Italian Journal of Applied Statistics*, 35(1), Article 6.

12. Davis, M.J., Swartz, T.B., Schulte, O., Gamboa Higuera, J.C. and Javan, M. (2023). Match predictions in the National Hockey League using box scores. In *Statistics Meets Sports: What We Can Learn from Sports Data*, Editors Y. Dominicy and C. Ley. Cambridge Scholars Publishing: Cambridge UK, 27-42.

13. Reyers, M. and Swartz, T.B. (2023). Quarterback evaluation in the National Football League using tracking data. *AStA Advances in Statistical Analysis*, 107(1), 327-342.

14. Wu, L. and Swartz, T.B. (2023). The calculation of player speed from tracking data. *International Journal of Sports Science and Coaching*, 18(2), 516-522.

15. Tea, P. and Swartz, T.B. (2023). The analysis of serve decisions in tennis using Bayesian hierarchical models. *Annals of Operations Research*, 325(1), 633-648.

16. Epasinghege Dona, N., Nguyen, R., Gill, P.S. and Swartz, T.B. (2022). Expected economy rate. *Studies of Applied Economics*, 40(1), 1-14.

17. Peng, K., Clarke, D.C. and Swartz, T.B. (2022). Bayesian approaches for critical velocity modelling of data from intermittent efforts. *International Journal of Sports Science and Coaching*, 17(4), 868-879.

18. Wang, S. and Swartz, T.B. (2022). Moment matching adaptive importance sampling with skew-student proposals. *Monte Carlo Methods and Applications*, 28(2), 149-162.

19. Swartz, T.B. (2022). The "reversal" of the relative age effect. *Research and Investigations in Sports Medicine*, 8(3), 718-720.

20. Guan, T., Nguyen, R., Cao, J. and Swartz, T.B. (2022). In-game win probabilities for the National Rugby League. *Annals of Applied Statistics*, 16(1), 349-367.

21. Thomson, J., Perera, H. and Swartz, T.B. (2021). Contextual batting and bowling in limited overs cricket. *South African Statistical Journal*, 55(1), 73-86.

22. Wu, Y., Danielson, A., Hu, J. and Swartz, T.B. (2021). A contextual analysis of crossing the ball in soccer. *Journal of Quantitative Analysis in Sports*, 17(1), 57-66.

23. Chu, D. and Swartz, T.B. (2020). Foul accumulation in the NBA. *Journal of Quantitative Analysis in Sports*, 16(4), 301-309.

24. Swartz, T.B. (2020). Where should I publish my sports paper? *The American Statistician*, 74(2), 103-108.

25. Wang, S., Wang, L. and Swartz, T.B. (2020). Inference for misclassified multinomial data with covariates. *The Canadian Journal of Statistics*, 48(3), 655-669.

26. Bailey, S.R., Loeppky, J. and Swartz, T.B. (2020). The prediction of batting averages in Major League Baseball. *Stats*, 9(3), 84-93.

27. Peiris, M.S. and Swartz, T.B. (2020). Revisiting the kurtosis of stationary processes with applications to volatility models. *Journal of Statistical and Econometric Methods*, 9(2), 1-17.

28. Silva, R., Guan, Y. and Swartz, T.B. (2019). Bayesian treatment of nonstandard problems in test analysis. *Metron*, 77(3), 227-238.

29. Peiris, M.S. and Swartz, T.B. (2019). Developments and applications of biostatistical time series: a review. *Biostatistics & Biometric Applications*, 3(5), 1-4.

30. Gill, P. and Swartz, T.B. (2019). A characterization of the degree of weak and strong links in doubles sports. *Journal of Quantitative Analysis in Sports*, 15(2), 155-162.

31. Wu, Y., Chow-White, P. and Swartz, T.B. (2019). Net best-ball team composition in golf. *Journal of Sports Analytics*, 5(3), 169-179.

32. Beaudoin, D. and Swartz, T.B. (2018). A computationally intensive ranking system for paired comparison data. *Operations Research Perspectives*, 5, 105-112.

33. Chu, D., Wu, Y. and Swartz, T.B. (2018). Modified Kelly criteria. *Journal of Quantitative Analysis in Sports*, 14(1), 1-11.

34. Perera, H., Davis, J. and Swartz, T.B. (2018). Assessing the impact of fielding in Twenty20 cricket. *Journal of the Operational Research Society*, 69(8), 1335-1343.

35. Silva, R., Davis, J. and Swartz, T.B. (2018). The evaluation of pace of play in hockey. *Journal of Sports Analytics*, 4(2), 145-151.

36. Silva, R., Guan, Y. and Swartz, T.B. (2017). Bayesian diagnostics for test design and analysis. *Journal on Efficiency and Responsibility in Education and Science*, 10(2), 44-50.

37. Wu, S. and Swartz, T.B. (2017). Using AI to correct play-by-play substitution errors. *MIT Sloan Sports Analytics Conference*; http://www.sloansportsconference.com

38. Swartz, T.B. (2017). Hockey analytics. *Wiley StatsRef: Statistics Reference Online*, 1-10.

39. Swartz, T.B. (2017). Research directions in cricket. *Handbook of Statistical Methods and Analyses in Sports*, Chapman & Hall/CRC handbooks of modern statistical methods: Boca Raton, 445-460.

40. Swartz, P., Grosskopf, M., Bingham, D.R. and Swartz, T.B. (2017). The quality of pitches in Major League Baseball. *The American Statistician*, 71(2), 148-154.

41. Silva, R., Perera, H., Davis, J. and Swartz, T.B. (2016). Tactics for Twenty20 cricket. *South African Statistical Journal*, 50(2), 261-271.

42. Beaudoin, D., Schulte, O. and Swartz, T.B. (2016). Biased penalty calls in the National Hockey League. *Statistical Analysis and Data Mining: The ASA Data Science Journal*, 9(5), 365-372.

43. Silva, R. and Swartz, T.B. (2016). Analysis of substitution times in soccer. *Journal of Quantitative Analysis in Sports*, 12(3), 113-122.

44. Silva, R. and Swartz, T.B. (2016). Rejoinder to Myers (2016). *Journal of Quantitative Analysis in Sports*, 12(3), 125-126.

45. Perera, H., Davis, J. and Swartz, T.B. (2016). Optimal lineups in Twenty20 cricket. *Journal of Statistical Computation and Simulation*, 86(14), 2888-2900.

46. Perera, H. and Swartz, T.B. (2016). Muralitharan and Sangakkara: Forging identity and pride in a small island nation. *More than Cricket and Football: International Sport and the Challenge of Celebrity*, Editors J.N. Rosen and M.M. Smith, University Press of Mississippi, 186-203.

47. Davis, J., Perera, H. and Swartz, T.B. (2015). Player evaluation in Twenty20 cricket. *Journal of Sports Analytics*, 1(1), 19-31.

48. Davis, J., Perera, H. and Swartz, T.B. (2015). A simulator for Twenty20 cricket. *The Australian and New Zealand Journal of Statistics*, 57(1), 55-71.

49. Silva, R., Manage, B.W. and Swartz, T.B. (2015). A study of the powerplay in one-day cricket. *European Journal of Operational Research*, 244(3), 931-938.

50. Swartz, T.B., Gill, P.S. and Muthukumarana, S. (2015). A Bayesian approach for the analysis of triadic data in cognitive social structures. *Journal of the Royal Statistical Society, Series C.* 64(4), 593-610.

51. Perera, H., Gill, P.S. and Swartz, T.B. (2014). Declaration guidelines in test cricket. *Journal of Quantitative Analysis in Sports*, 10(1), 15-26.

52. Hira, A. and Swartz, T.B. (2014). What makes Napa Napa? The roots of success in the wine industry. *Wine Economics and Policy*, 3(1), 37-53.

53. Muthukumarana, S. and Swartz, T.B. (2014). Bayesian analysis of ordinal survey data using the Dirichlet process to account for respondent personality traits. *Communications in Statistics: Simulation and Computation*, 43(1), 82-98.

54. Swartz, T.B. and Arce, A. (2014). New insights involving the home team advantage. *International Journal of Sports Science and Coaching*, 9(4), 681-692.

55. Yousefi, K. and Swartz, T.B. (2013). Advanced putting metrics in golf. *Journal of Quantitative Analysis in Sports*, 9(3), 239-248.

56. Swartz, T.B., Arce, A. and Parameswaran, M. (2013). Assessing value of the draft positions in Major League Soccer's SuperDraft. *The Sport Journal*, 16, Article 9.

57. Perera, H. and Swartz, T.B. (2013). Resource estimation in Twenty20 cricket. *IMA Journal of Management Mathematics*, 24(3), 337-347.

58. Valero, J. and Swartz, T.B. (2012). An investigation of synergy between batsmen in opening partnerships. *Sri Lankan Journal of Applied Statistics*, 13, 87-98.

59. Swartz, T.B., Tennakoon, A., Nathoo, F., Tsao, M. and Sarohia, P.S. (2011). Ups and downs: team performance in best-of-seven playoff series. *Journal of Quantitative Analysis in Sports*, 7(4), Article 2.

60. Swartz, T.B. (2011). Bayesian clustering with priors on partitions. *Statistica Neerlandica*, 65(4), 371-386.

61. Gill, P.S. and Swartz, T.B. (2011). Stylometric analyses using Dirichlet process mixture models. *Journal of Statistical Planning and Inference*, 141(11), 3665-3674.

62. Swartz, T.B. (2011). Drafts versus auctions in the Indian Premier League. *South African Statistical Journal*, 45(2), 249-272.

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63. Cook, V.J., Hu, X.J. and Swartz, T.B. (2011). Cox regression with covariates missing not at random. *Statistics in Biosciences*, 3(2), 208-222.

64. Bhattacharya, R., Gill, P.S. and Swartz, T.B. (2011). Duckworth Lewis and Twenty20 cricket. *Journal of the Operational Research Society*, 62(11), 1951-1957.

65. Beaudoin, D. and Swartz, T.B. (2010). Strategies for pulling the goalie in hockey. *The American Statistician*, 64(3), 197-204.

66. Ghosh, P., Gill, P.S., Muthukumarana, S. and Swartz, T.B. (2010). A semiparametric Bayesian approach to network modelling using Dirichlet process priors. *The Australian and New Zealand Journal of Statistics*, 52(3), 289-302.

67. Swartz, T.B. (2009). A new handicapping system for golf. *Journal of Quantitative Analysis in Sports*, 5(2), Article 9.

68. Swartz, T.B., Gill, P.S. and Muthukumarana, S. (2009). Modelling and simulation for one-day cricket. *The Canadian Journal of Statistics*, 37, 143-160.

69. Treschow, M., Gill, P.S. and Swartz, T.B. (2009). King Alfred's scholarly writings and the authorship of the First Fifty Prose Psalms. *The Heroic Age*, Issue 12, Article 3.

70. Muthukumarana, S., Schwarz, C.J. and Swartz, T.B. (2008). Bayesian analysis of mark-recapture data with travel time-dependent survival probabilities (with discussion). *The Canadian Journal of Statistics*, 36, 5-28.

71. Swartz, T.B. (2007). A graduate course in statistics in sport. Invited paper in *Proceedings of the 56th Session of the International Statistical Institute*, Lisboa.

72. Summers, A., Swartz, T.B. and Lockhart, R.A. (2007). Optimal drafting in hockey pools. In *Statistical Thinking in Sports* (J.H. Albert and R.H. Koning, editors), Chapman & Hall/CRC Press, 263-276.

73. Swartz, T.B. (2007). Improved draws for highland dance. *Journal of Quantitative Analysis in Sports*, 3(1), Article 2.

74. Gill, P.S. and Swartz, T.B. (2007). Bayesian analysis of dyadic data. *American Journal of Mathematical and Management Sciences:* Special volume on Modern Advances in Bayesian Theory and Applications, 27, 73-92.

75. Gill, P.S., Swartz, T.B. and Treschow, M. (2007). A stylometric analysis of King Alfred's literary works. *Journal of Applied Statistics*, 34, 1251-1258.

76. Swartz, T.B., Gill, P.S., Beaudoin, D. and de Silva, B.M. (2006). Optimal batting orders in one-day cricket. *Computers and Operations Research*, 33, 1939-1950.

77. Evans, M., Guttman, I. and Swartz, T.B. (2006). Optimality and computations for relative surprise inferences. *The Canadian Journal of Statistics*, 34, 113-129.

78. Yang, T.Y. and Swartz, T.B. (2005). Applications of binary segmentation to the estimation of quantal response curves and spatial intensity. *Biometrical Journal*, 47, 489-501.

79. Gill, P.S., Banneheka, S.G. and Swartz, T.B. (2005). Tests concerning equicorrelation matrices with grouped normal data. *Communications in Statistics: Theory and Methods*, 34, 857-873.

80. Swartz, T.B., Haitovsky, Y., Vexler, A. and Yang, T.Y. (2004). Bayesian identifiability and misclassification in multinomial data. *The Canadian Journal of Statistics*, 32, 285-302.

81. Gill, P.S. and Swartz, T.B. (2004). Bayesian analysis of directed graphs data with applications to social networks. *Journal of the Royal Statistical Society, Series C*, 53, 249-260.

82. Insley, R., Mok, L. and Swartz, T.B. (2004). Issues related to sports gambling. *The Australian and New Zealand Journal of Statistics*, 46, 219-232.

83. Yang, T.Y. and Swartz, T.B. (2004). A two-stage Bayesian model for predicting winners in major league baseball. *Journal of Data Science*, 2, 61-73.

84. Beaudoin, D. and Swartz, T.B. (2003). The best batsmen and bowlers in one-day cricket. *South African Statistical Journal*, 37(2), 203-222.

85. Swartz, T.B. (2003). Bayesian modeling and computations in final-offer arbitration. *Journal of Business and Economic Statistics*, 21, 74-79. Preliminary version in *Monographs of Official Statistics: Bayesian methods with applications to science, policy and official statistics* (E.I. George, Editor), Eurostat, 2001, 537-543.

86. Villegas, C., Swartz, T.B. and Martinez, C.J. (2002). On the probability of a model. *Test*, 11, 413-438.

87. Beaudoin, D., Insley, R. and Swartz, T.B. (2002). Studying the bankroll in sports gambling. *Sixth Conference on Mathematics and Computers in Sport* (G. Cohen and T. Langtry, editors), Bond University, Queensland, Australia, 69-77.

88. Gill, P.S. and Swartz, T.B. (2001). Statistical analyses for round robin interaction data. *The Canadian Journal of Statistics*, 29, 321-331.

89. de Silva, B.M., Pond, G.R. and Swartz, T.B. (2001). Estimation of the magnitude of victory in one-day cricket. *The Australian and New Zealand Journal of Statistics*, 43, 259-268.

90. Evans, M. and Swartz, T.B. (2001). Stratified sampling with spherically symmetric importance samplers. *Data Analysis from Statistical Foundations: A Festchrift in honour of the 75th birthday of D.A.S. Fraser* (A.K. Md. E. Saleh, editor), Nova Science Publishers, Inc., Huntington, New York, 245-253.

91. Evans, M. and Swartz, T.B. (2000). Simulation from non-standard distributions using envelope methods. *Proceedings of the 2000 Winter Simulation Conference* (J.A. Joines, R. Barton, P. Fishwick and K. Kang, editors), Piscataway, New Jersey: The Institute of Electrical and Electronics Engineers, 572-576.

92. de Silva, B.M., Pond, G.R. and Swartz, T.B. (2000). Applications of the Duckworth-Lewis method. *Fifth Conference on Mathematics and Computers in Sport* (G. Cohen and T. Langtry, editors), University of Technology, New South Wales, Australia, 113-117.

93. Bingham, D.R. and Swartz, T.B. (2000). Equitable handicapping in golf. *The American Statistician*, 54, 170-177.

94. Swartz, T.B. (1999). Nonparametric goodness-of-fit. *Communications in Statistics: Theory and Methods*, 28, 2821-2841.

95. Heard, A.D. and Swartz, T.B. (1999). Extended voting measures. *The Canadian Journal of Statistics*, 27, 177-186.

96. Dey, D.K., Gelfand, A.E., Swartz, T.B. and Vlachos, P.K. (1998). Simulation based model checking for hierarchical models. *Test*, 7, 325-346.

97. Bingham, D.R., de Silva, B.M. and Swartz, T.B. (1998). Issues in cricket and golf. *Fourth Conference on Mathematics and Computers in Sport* (N. de Mestre and K. Kumar, editors), Bond University, Queensland, Australia, 189-195.

98. Evans, M. and Swartz, T.B. (1998). Random variable generation using concavity properties of transformed densities. *Journal of Computational and Graphical Statistics*, 7, 514-528.

99. Heard, A.D. and Swartz, T.B. (1998). Empirical Banzhaf indices. *Public Choice*, 97, 701-707.

100. de Silva, B.M. and Swartz, T.B. (1997). Winning the coin toss and the home team advantage in one-day international cricket matches. *New Zealand Statistician*, 32, 16-22. Reprinted in *The Cricket Statistician: The Journal of the Association of Cricket Statisticians and Historians*, Autumn 1999, 107, 23-29.

101. Evans, M. Gilula, Z., Guttman, I. and Swartz, T.B. (1997). Bayesian analysis of stochastically ordered distributions of categorical variables. *Journal of the American Statistical Association*, 92, 208-214.

102. Heard, A.D. and Swartz, T.B. (1997). The regional veto formula and its effects on Canada's constitutional amendment process. *The Canadian Journal of Political Science*, 30, 339-356.

103. Swartz, T.B. (1996). Bayesian goodness-of-fit. *Proceedings of the Section on Bayesian Statistical Science*, American Statistical Association, Chicago, Illinois, August 2-8, 278-283.

104. Shaw, J.E.H., Genz, A., Monahan, J., Schervish, M.J., Wasserman, L., Wolfinger, R., Evans, M. and Swartz, T.B. (1996). Comments on "Methods for approximating integrals in Statistics with special emphasis on Bayesian integration problems". *Statistical Science*, 11, 54-64.

105. Evans, M., Guttman, I., Haitovsky, Y. and Swartz, T.B. (1995). Bayesian analysis of binary data subject to misclassification. *Bayesian Analysis in Statistics and Econometrics: Essays in Honor of Arnold Zellner* (D. Berry, J. Geweke and K.M. Chaloner, editors), John Wiley & Sons Inc, New York, 67-77.

106. Evans, M. and Swartz, T.B. (1995). Bayesian integration using multivariate Student importance sampling. *Computing Science and Statistics*, 27, 456-461.

107. Martinez, C.J., Swartz, T.B. and Villegas, C. (1995). On semiparametric pivotal Bayesian inference for quantiles. *Communications in Statistics: Theory and Methods*, 24, 2499-2515.

108. Evans, M. and Swartz, T.B. (1995). Methods for approximating integrals in Statistics with special emphasis on Bayesian integration problems. *Statistical Science*, 10, 254-272.

109. Chen, W. and Swartz, T.B. (1994). Some quantitative aspects of five pin bowling. *The American Statistician*, 48, 92-98.

110. Evans, M. and Swartz, T.B. (1994). Distribution theory and inference for polynomial-normal densities. *Communications in Statistics: Theory and Methods*, 23, 1123-1148.

111. Swartz, T.B. (1993). Subjective priors for the Dirichlet process. *Communications in Statistics: Theory and Methods*, 22, 2999-3011.

112. Evans, M. and Swartz, T.B. (1992). Some integration strategies for problems in statistical inference. *Computing Science and Statistics*, 310-317.

113. Routledge, R.D. and Swartz, T.B. (1992). Rejoinder to "Fitting Taylor's power law," by J.N. Perry and I. P. Woiwod. *Oikos*, 65, 543-544.

114. Swartz, T.B. and Villegas, C. (1992). Posterior probability and conditional coverage. *Statistics and Probability Letters*, 14, 169-173.

115. Lockhart, R. A. and Swartz, T.B. (1992). Computing asymptotic p-values for EDF tests. *Statistics and Computing*, 2, 137-141.

116. Swartz, T.B. (1992). Goodness-of-fit tests using Kullback Leibler information. *Communications in Statistics: Computation and Simulation*, 21, 711-729.

117. Routledge, R.D. and Swartz, T.B. (1991). Taylor's power law re-examined. *Oikos*, 60, 107-112.

118. Evans, M. and Swartz, T.B. (1988). Monte Carlo computation of multivariate normal probabilities. *Journal of Statistical Computation and Simulation*, 30, 117-128.

119. Evans, M. and Swartz, T.B. (1988). Sampling from Gauss rules. *SIAM Journal of Scientific and Statistical Computation*, 9, 950-961.

Papers in Progress:

120. Hira, A., Swartz, T. and Cao, J. Taxes and equity: Documenting the limited nature of fiscal policy to solve social problems.

121. Perera, H., Silva, R. and Swartz, T.B. Checking for collaboration in online multiple choice testing.

122. Moreau, R., Perera, H. and Swartz, T.B. Valuation of NHL draft picks using functional data analysis.

123. Cavan, E., Cao, J. and Swartz, T.B. NHL aging curves using functional data analysis.

124. Peng, K., Hu, X.J. and Swartz, T.B. The timing of corner kicks in soccer by the analysis of event history data.

125. Swartz, T.B. The simple detection of profitable sports gambling systems.

126. Epasinghege Dona, N., Peiris, H. and Swartz, T.B. Analysis of the impact of unforced errors in tennis.

Other Publications:

- D'Urso, P., De Giovanni, L. and Swartz, T.B. (2023). Editorial: Big data and data science in sport. *Annals of Operations Research*, 325(1), 1-7.

- Swartz, T.B. (2020). My thoughts on SASA 2019. *SASA News/SASV NUUS: Newsletter of the South African Statistical Association*, Nr 1 2020, 9-10.

- McHale, I. and Swartz, T.B. (2019). Editorial: Forecasting in sports. *International Journal of Forecasting*, 35(2), 710-711.

- Swartz, T.B. (2017). Introduction to Part VIII, Miscellaneous Topics. *The Oxford Anthology of Statistics in Sports, Volume 1:2000-2004*, Editors J. Cochran, J. Bennett and J. Albert, Oxford University Press: Oxford, 459-462.

- Bingham, D.R. and Swartz, T.B. (2017). Equitable handicapping in golf. *The Oxford Anthology of Statistics in Sports, Volume 1:2000-2004*, Editors J. Cochran, J. Bennett and J. Albert, Oxford University Press: Oxford, 304-316, reprinted from *The American Statistician*, 54, 170-177.

- Chu, J.S.C., Hunt-Newbury, R., Johnsen, R., Moerman, D.G., Swartz, T.B., Baillie, D.L. and Chen, N. (2007). Chromosonal clustering of genome-wide tissue-specific genes in C. elegans.

- Letter to the editor in *The American Mathematical Monthly*. April 1990, pg 313.

- Letter to the editor in *Chance: New Directions for Statistics and Computing*. Summer 1990, 3, 6-7.

Presentations:

- 128 presentations at various conferences and universities from 1988-2020 including keynote speaker at the International Conference in Statistics 2024 in Colombo, SL, Workshop presenter at the International Conference in Statistics 2024 in Colombo, SL, Workshop presenter at the SSC 2024 meeting in St John's, plenary speaker and Workshop presenter at the 2019 Annual Meeting of the South African Statistical Association in Port Elizabeth SA, keynote speaker at Math-Sport Asia 2018 at XLRI in Jamshedpur India, JSM invited speaker (2011, 2014, 2017, 2021), invited Breakout session speaker at 2016 SAS Global Forum in Las Vegas, keynote speaker at the 2015 annual meeting of the South African Statistical Association, luncheon speaker at the 2015 JSM for the Section on Statistics in Sports, speaker at 2015 session of SFU Cafe Scientifique, Workshop presenter at the SSC 2012 meeting in Guelph, keynote lecturer at the 2012 CUMC meeting in Kelowna, Special Guest lecturer at the 2011 ASASL Conference in

Colombo, Sri Lanka and keynote speaker at the 2011 IMA meeting in Salford, UK

Media Coverage:

- Jan 19/23, Sample Space: Random Talks, Podcast (Episode 7) for University College London, https://www.ucl.ac.uk/statistics/sample-space

- Nov 16/22, BCIT interview concerning artificial intelligence at the 2022 World Cup

- Apr 10/19, SFU News, "Statistics students impress NFL with their moves", article on four of my graduate students who won the Big Data Bowl in Indianapolis

- Apr 25/17 - The Globe and Mail, some quotes in the article "Home ice advantage won't be so simple when the Senators take on the Rangers", http://www.theglobeandmail.com/sports/hockey/home-ice-advantage-wont-be-so-simple-when-senators-take-on-rangers/article34814745/

- Nov 25/16 - interview on Zee TV Canada concerning cricket analytics, 13:35-18:00 mark, https://youtu.be/IifakjRxlXY

- Nov 23/16 - interview with Indo-Canadian Voice on research activities of my PhD student Harsha Perera; www.voiceonline.com/harsha-pereras-research-will-revolutionize-the-way-cricketers-are-selected-and-game-strategies-are-executed/

- Nov 2/16 - SFU recruitment video, www.sfu.ca/sfunews/stories/2016/big-data-discovering-new-career-opportunities-in-pro-sports.html

- Sep 24/16 - The Daily Hive, interview related to the CASSIS meeting, "SFU analytics conference attracts Canucks, Seahawks", http://dailyhive.com/vancouver/cascadia-analytics-conference-canucks-seahawks

- Apr 10/16 - CTV News Vancouver, soundbites for the story "Bringing together hockey and science", http://bc.ctvnews.ca/video?binId=1.1184759 (6:40 mark)

- Apr 9/16 - Global News, soundbites in "As Canucks struggle, Vancouver hockey analytics conference looks to the future, http://globalnews.ca/news/2629445/as-canucks-struggle-vancouver-hockey-analytics-conference-looks-to-the-future/

- Apr 7/16 - Vancouver Sun, quotes in the article "Vancouver hockey analytics conference to expand the conversation on advanced stats", http://vancouversun.com/sports/hockey/vancouver-hockey-analytics-conference-to-expand-the-conversation-on-advanced-stats and in the Vancouver Province, http://www.theprovince.com/sports/hockey/

- Mar 14/16 - Research2Reality excerpts from an interview "March madness math: sports stats put you ahead of the game" http://research2reality.com/headlines/march-madness-math-sports-stats-put-you-ahead-of-the-game/

- Mar 8/16 - "South African selectors omitted crucial player for T20 World Cup: Statistician", http://www.timeslive.co.za/sport/cricket/2016/03/08/South-African-selectors-omitted-crucial-player-for-T20-World-Cup-Statistician

- Mar 4/16 - ResearchGate News Print Interview on "Cricket analytics", www.researchgate.net/blog/post/statistician-picks-winning-cricket-teams-for-world-t20, Twitter: http://twitter.com/ResearchGate, Facebook: http://www.facebook.com/ResearchGate/, Google+: http://plus.google.com/u/0/b/105131475095543635454/+researchgate/posts

- Feb 24/16 - SiriusXM Wharton Radio, 25 minute interview on "Biased penalty calls in the National Hockey League".

- Nov 9/15 - "SFU prepares to host hockey analytics conference in April", The Peak, Student Newspaper of Simon Fraser University.

- Mar 2/15 - ESPN The Magazine, column by Craig Custance on "Teams should pull goalies two minutes before they do"

- Feb 10/15 - work cited in "Follow the numbers (and Patrick Roy): Pull your goalies, NHL coaches", The National, Abu Dhabi

- Feb 2/15 - "Statisticians give athletes a competitive edge", The Peak, SFU's student newspaper

- Jun 9/14 Scorecard: Unguarded Optimism, article appearing in Sports Illustrated sourced from Beaudoin and Swartz (2010)

- May 5/14 - article in SFU Peak on sports analytics research and www.the-peak.ca/2014/05/trailing-nhl-teams-should-pull-goalies-earlier

- Apr 28/14 - article in the Toronto Star on 2010 paper with Beaudoin

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- Apr 18/14 - ESPN article mentioning 2010 paper with Beaudoin (www.espn.go.com/nhl/playoffs/2014/story //_/id/10805629/colorado-avalanc-patrick-roy-not-afraid-bold-moves)

- Apr 18/14 - ICI RADIO-CANADA re 2010 paper with Beaudoin (www.blogues.radio-canada.ca/bloguesportif/2014/04/18/letude-secrete-de-patrick-roy-et-les-anomalies-de-la-serie-ch-lightning)

- Apr 13/12, Apr 16/12, Apr 20/12 - discussion of Canucks and probability on CTV television, CTV television and Metro Vancouver magazine

- Jun 8/11, Jun 9/11, Jun 10/11 and Jun 10/11 - discussion of 2011 paper on playoff series and NHL playoff predictions on AM1470 radio, Global television, *Metro Vancouver* magazine and CTV television

- Sep 5/10 - 30 minute CKNW radio interview on the graduate course STAT890

- May 7/10, May 10/10, May 11/10, May 12/10 and May 12/10 - discussion of 2010 TAS paper in *The Globe and Mail*, *Le Journal de Quebec*, *The Hockey News*, AM News 1130 and *24 Hours*

- Mar 31/10 - statistical expert interviewed concerning statistics and baseball on Stat Attack (The Score TV station), multiple broadcasts

- Mar 20/08 - statistical expert interviewed concerning consecutive numbers in Lotto 649, Global News

- Aug 30/03 and Sept 10-12/03 - discussion of the relationship between weather and brewery production, *The Vancouver Sun* and the Weather Channel interview

Courses Taught at SFU:

- STAT 102 - Introduction to Statistics B

- STAT 201 - Statistics for the Life Sciences

- STAT 203 - Introduction to Statistics for the Social Sciences

- STAT 270 - Introduction to Probability and Statistics

- STAT 272 - Introduction to Probability and Statistics 1

- STAT 285 - Intermediate Probability and Statistics

- STAT 302 - Analysis of Experimental and Observational Data

- STAT 330 - Linear Models in Applied Statistics 1

- STAT 350 - Linear Models in Applied Statistics 2

- STAT 372 - Introduction to Probability and Statistics 2

- STAT 380 - Introduction to Stochastic Processes

- STAT 410 - Statistical Analysis of Sample Surveys

- STAT 420 - Nonparametric Statistics

- STAT 430 - Statistical Design and Analysis of Experiments

- STAT 440 - Statistical Quality Control

- STAT 450 - Statistical Theory

- STAT 460 - Bayesian Statistics

- STAT 472 - Linear Models in Statistics

- STAT 490 - Special Topics: Statistics in Sport

- STAT 495 - Directed Studies in Prob and Stats: Soccer Analytics

- STAT 650 - Quantitative Analysis in Resource Mgmt and Field Biology

- STAT 801 - Mathematical Statistics

- STAT 803 - Data Analysis

- STAT 890 - Special Topics: Statistical Computing

- STAT 890 - Special Topics: Statistics in Sport

- STAT 895 - Special Topics: Data Analytics for Sports Science

Course Development:

- development and ongoing supervision (since 2007) of Distance Education courses STAT 101C, STAT 201C, STAT 203C, STAT 270C and STAT 302C through SFU's Centre for Educational Excellence (CEE)

Supervision:

- MSc supervisor and mentor of Dani Chu, Matthew Reyers, Lucas Wu and James Thomson (SFU) who won the inaugural College Big Data Bowl 2019 sponsored by the NFL; the SFU team was victorious over finalists from Duke University, Carnegie Mellon University and the University of Pennsylvania

- MSc supervisor and mentor of Elijah Cavan, Brendan Kumagai and Ryker Moreau, who together with Robyn Ritchie (SFU) won the overall Big Data Bowl 2022 sponsored by the NFL; the SFU team competed against 268 teams from college and industry

- committee member for 73 MSc and PhD students from 1987-2020

- senior supervisor of the following SFU students:

Student	Degree	Current Position
P. Sudasinghe	MSc (in progress)	
H. Peiris	PhD (in progress)	
K. Peng	PhD (in progress)	
N. Epasinghege Dona	PhD (2024)	Senior Data Analyst for BC Health
D. Lai	MSc (2023)	Actuary for Intact
R. Moreau	MSc (2022)	Analyst for SportsMedia Technology
B. Kumagai	MSc (2022)	Analyst for Zelus Analytics
E. Cavan	MSc (2022)	Analyst for Pinnacle Sports
Y. Wu	PhD (2022)	Analyst for Zelus Analytics
K. Peng	MSc (2021)	PhD Statistics student at SFU
P. Tea	MSc (2021)	Data Analyst for SportsMedia Technology
J. Thomson	MSc (2020)	Data Analyst for Resulta
M. Reyers	MSc (2020)	Analyst for Zelus Analytics
D. Chu	MSc (2020)	Data Analyst for NHL Seattle Kraken
M. Li	MSc (2019)	Data Analyst for Vancouver Island Health Region
Y. Wu	MSc (2018)	Analyst at Zelus Analytics
C. Karunanayaka	PhD (2018)	Assistant Professor, University of Fraser Valley
S. Bailey	MSc (2017)	Manager Analytics and Data for the Los Angeles Rams
R. Hsia	MSc (2017)	Quantitative Analyst for Connor, Clark & Young
S. Wu	MSc (2017)	Data Scientist for Shopify
D. Chu	USRA (2017)	Data Analyst for NHL Seattle Kraken
Y. Wu	USRA (2017)	PhD student in Statistics at SFU
R. Silva	PhD (2016)	Senior Lecturer, University of Sri Jayewardenepura
G. Smith	MSc (2016)	Statistical Consultant with Pit Rho

A. Adeeb	USRA (2016)	MSc student in Statistics at Dalhousie
K. Routley	MSc (2015)	Electronic Arts
H. Perera	PhD (2015)	Senior Lecturer, SFU
Y. Wu	USRA (2015)	Analyst for Zelus Analytics
J. Rodriguez	MSc (2013)	Sessional Instructor, SFU
K. Yousefi	MSc (2013)	Biostatistician, GenomeDx, Vancouver
A. Arce	USRA (2012)	SFU Undergrad
M. Parameswaran	USRA (2012)	SFU Undergrad
J. Valero	MSc (2012)	Game Analytics Consultant, WB Games, Montreal
F. Moya	MSc (2012)	Data Analyst, Amazon, Seattle
A. Tennakoon	MSc (2011)	Data Analyst, University of Manitoba
H. Perera	MSc (2011)	Senior Lecturer SFU
R. Bhattacharya	MSc (2010)	Statistician, Becton Dickinson (LanceSoft)
S. Muthukumarana	PhD (2010)	Associate Professor, University of Manitoba
V. Wong	MSc (2009)	Statistician, iCAPTURE Centre, St Paul's Hospital
S. Muthukumarana	MSc (2007)	Associate Professor, University of Manitoba
L. Liu	MSc (2007)	Programmer, Vancity
A. Summers	MSc (2005)	Statistician, Syreon Corporation
Y. Li	MSc (2004)	Golf Instructor
D. Beaudoin	MSc (2003)	Associate Professor, Université Laval
F. Khandwala	MSc (2001)	Biostatistician, Cleveland Clinic Foundation
L. Mok	MSc (2001)	Trader, Standard Chartered Bank, Hong Kong
E. Chan	MSc (2000)	Statistician, Harvard School of Public Health
G. Pond	MSc (2000)	Associate Professor, McMaster University
D. Beaudoin	USRA (2000)	Associate Professor, Université Laval
P. Lui	MSc (1997)	Statistics Instructor, Hong Kong Community College
J. Nasila	MSc (1992)	Agricultural Research Scientist, Kenya
W. Chen	MSc (1991)	Engineer, Lucent Technologies, Boston
S. Banneheka	MSc (1991)	Professor, University of Sri Jayewardenepura
S. Ma	MSc (1991)	Pacific Rim Trader, Vancouver
S. Lee	MSc (1989)	Mathematics Teacher, Singapore

Teaching Distinctions:

- 2017 nominee for Leadership Award in Graduate Studies at SFU

- 1998 nominee for the Faculty of Science Teaching Award

Consulting:

- expert witness for Rush Ihas and Hardwick LLP (2024)

- expert witness for Segev LLP (2022)

- expert witness for Public Prosecution Service of Canada (2020)

- expert witness for Forbes, Boyle and Lambert (2017-2018)

- expert witness for Smith, Thomas and Skogstad (2016)

- expert witness for Breivik and Company (2009)

- expert witness for Gowling, Lafleur and Henderson (2008)

- consultant for Idaho Department of Fish and Game (2008)

- consultant for Royal Canadian Golf Association (2001)

- consultant for Athabasca University (2000)

- consultant for Augusta Capital Corporation (2000)

- consultant for Labatts Brewery (1998)

- Mitacs supervisor of Matthew Reyers with Terramera (2019)

- Mitacs supervisor of Suman Muthukumarana with Pacific Ocean Shelf Tracking (2007)

Service:

- contributions to SFU:

  - Chair of SFU's Department of Statistics and Actuarial Science 2019-2021, 2007-2008
  - Graduate Studies Chair for the Department of Statistics and Actuarial Science, SFU, 2005, 2011-2017
  - Statistics Colloquium Chair (8 years), Statistical Consulting Service (11 years), Women Do Math Conference (4 years) and Departmental Tenure and Promotions Committee (17 years)

- editorial contributions:

  - Associate Editor for *Journal of Quantitative Analysis in Sports*, since 2011

- Associate Editor for *International Journal of Forecasting*, since 2019
- Associate Editor for *Journal of Sports Analytics*, hockey and golf, since 2019
- Editorial Board Member of *International Journal of Sports Science and Coaching*, since 2019
- Associate Editor for *Sri Lankan Journal of Applied Statistics* and member of the International Advisory Board, since 2011
- Guest Editor for the special issue "Big Data and Data Science in Sport" in the *Annals of Operations Research*, 2020-2022
- International Technical Committee Member for the *IASSL*, since 2017
- Guest Editor for the special issue "Forecasting in Sports" in the *International Journal of Forecasting*, 2017-2018
- International Editorial member of *Ceylon Journal of Science*, since 2022
- External Reviewer of the Department of Mathematics and Statistics at the University of Victoria, January 15-17, 2000 and the Department of Mathematics and Statistics at Thompson Rivers University, May 2011
- Referee for 51 different journals and publications
- Search Committee Member (2023) for JQAS Editor

- conference activities:

  - Co-organizer for the 2024 CASSIS (Cascadia Symposium on Statistics in Sports), September 21, Vancouver Harbour Centre
  - Advisory Board Member and Program Committee member for ISC 2024 Conference in Sri Lanka
  - Co-organizer for the 2022 CASSIS (Cascadia Symposium on Statistics in Sports), September 24, Vancouver Harbour Centre
  - Co-organizer for AAAI Workshop on Artificial Intelligence in Team Sports, February 7-8, 2020, New York
  - Co-organizer for the 2018 CASSIS (Cascadia Symposium on Statistics in Sports), August 3, Vancouver Harbour Centre

- Co-organizer for the 2018 VanHac (Vancouver Hockey Analytics Conference), March 2-4, Vancouver Harbour Centre
- Faculty advisor for the 2017 VANSASH (Vancouver Sports Analytics Symposium and Hackathon, July 8-9, Vancouver Harbour Centre
- Co-organizer for the 2016 CASSIS (Cascadia Symposium on Statistics in Sports), September 24, Vancouver Harbour Centre
- Co-organizer for the 2016 VanHac (Vancouver Hockey Analytics Conference), April 9, Vancouver Harbour Centre
- Co-Chair for the conference "Statistics and Society in the New Information Age: Challenges and Opportunities", December 28-30, 2014, Colombo, Sri Lanka.
- Co-Chair for the conference "Statistical Concepts and Methods for the Modern World", December 28-30, 2011, Colombo, Sri Lanka
- Organizing Committee Member and Associate Editor for the International Statistical Conference, "Visions of Futuristic Statistical Methodology", Kandy, Sri Lanka, December 28-31, 2004
- Local Arrangements Chair for the 2001 meeting of the SSC (joint with WNAR and IMS - 460 registrants)

- committee work:

  - JSM 2024 Program Committee member
  - founding member of SFU's Sports Analytics Group, since 2014 and collaborator of the Sports Research Group at the University of Sri Jayewardenepura, Sri Lanka
  - Management Committee Member and ISI Sports Statistics Special Interest Group Committee Member, since 2010
  - SSC Board of Directors Regional Representative, 2015-2019
  - Member of the ASA Council of Sections (COS), 2015-2017
  - Member of the ASA Council of Meetings (COM), 2015-2018
  - COS Nominating Committee for the ASA, 2016-2017
  - Advisor to ScotDance Canada and BC Highland Dance on problems of balanced draws for championships and voting systems; methodology and software for draws used at various competitions including Canadian Championships, 2007-2015

- Executive Committee Member for the Statistical Society of Canada in the capacity of Meetings Coordinator, 2012-2014
- Handicap Research Committee Member, Royal Canadian Golf Association, 2000-2012
- Project Leader on PIMS Collaborative Research Group in "Bayesian Modelling and Computation for Networks", 2008-2010
- Mathematics and Statistics Coordinator for the Eastern Indonesian Universities Development Project, SFU, 1996-1998