

## CURRICULUM VITAE

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### EDUCATION:

1968	Mathematics	B.A.	Tufts University
1973	Mathematics	M.A.	University of Maryland
1976	Mathematics	Ph.D.	University of Maryland

### ACADEMIC APPOINTMENTS:

1971-1976	Graduate Teaching Assistant, Department of Mathematics, University of Maryland, College Park, MD
1976-1977	Visiting Assistant Professor, Department of Mathematics, University of Maryland, College Park, MD
1977-1982	Assistant Professor, Department of Applied Mathematics and Computer Science, University of Virginia, Charlottesville, VA
1982-1984	Associate Professor, Department of Applied Mathematics and Computer Science, University of Virginia, Charlottesville, VA
1984-1990	Associate Professor, Department of Biostatistics, Harvard School of Public Health, and Dana-Farber Cancer Institute, Boston, MA
1989-	Group Statistician, Eastern Cooperative Oncology Group
1989-1990	Statistician Representative, Massachusetts Cancer Control Committee
1990-	Professor of Biostatistics, Department of Biostatistics, Harvard School of Public Health, and Department of Biostatistical Science, Dana Farber Cancer Institute, Boston, MA
1990	Statistician Representative, NIH Breast Cancer Consensus Panel

### HONORS AND DISTINCTIONS:

1967	Phi Beta Kappa
1978-1980	Principal Investigator, NSF Grant ENG 78-06733, Statistical Problems for Markov Branching Processes.
1980-1981	Principal Investigator, NSF Grant MCS80-02887, Nonparametric Statistical Procedures for One and Two Samples of Censored Failure Time Data.
1981	Co-principal Investigator, Mayo Clinic Special Project, Statistical Procedures for Censored Data Survival Tests at Multiples Times.
1982-	Principal Investigator, NIH-NCI, Grant CA3269301, Nonparametric Tests for Censored Cancer Data.
1989-	Principal Investigator, NIH-NCI, Grant CA23318, Eastern Cooperative Oncology Group Statistical Center
1992	Elected Fellow, American Statistical Association

**PROFESSIONAL SOCIETIES:**

1972-	Mathematical Association of America
1978-	American Statistical Association
1979-	Institute of Mathematical Statistics
1980-1982	American Statistical Association, Vice President, Virginia Section
1982-1983	American Statistical Association, President, Virginia Section
1988-1992	Associate Editor, Biometrics
1991	Elected to International Statistical Institute

**BIBLIOGRAPHY:**

1. Harrington DP. Convergence of continuous time branching processes. *Stochastic Processes and Their Applications*, 1978; 6:317-22.
2. Harrington DP, Fleming TR. Estimation for branching processes with varying and random environments. *Mathematical Biosciences*, 1978; 39:255-71.
3. Harrington DP, Fleming TR. Estimation for discrete time nonhomogeneous Markov chains. *Stochastic Processes and Their Applications*, 1978; 7:131-139.
4. Fleming TR, Harrington DP. A note on efficiencies for estimators in varying environments. *Mathematical Biosciences*, 1979; 45:95-97.
5. White CC, Harrington DP. Application of Jensen's inequality for adaptive suboptimal design. *Journal of Optimization Theory and Applications*, 1980; 32:89-99; and, *Transactions of the Twenty-Fourth Conference of Army Mathematicians*, 1980; ARO 79-1: 451-463.
6. Fleming TR, O'Fallon JR, O'Brien PC, Harrington DP. Smirnov two sample test procedures generalized to arbitrarily right-censored data. *Biometrics*, 1980; 36:607-625.
7. Fleming TR, Harrington DP. A class of one and two sample test statistics for censored survival data based on the empirical cumulative hazard function. *Communications in Statistics*, 1981; A10:763-794.
8. Harrington DP, Fleming TR. Statistical properties of estimators for continuous time Markov branching processes in varying and random environments. *Mathematical Biosciences*, 1982; 58:111-122.
9. Harrington DP, Fleming TR. A class of rank test procedures for censored survival data. *Biometrika*, 1982; 69:553-566.
10. Harrington DP. A discussion of 'Linear nonparametric tests for comparison of counting processes, with applications to censored survival data,' by PK Andersen, O Borgan, R Gill, and N Keiding. *International Statistical Review*, 1982; 50:250-254.
11. Fleming TR, Green SJ, Harrington DP. Considerations for monitoring and evaluating treatment effects in clinical trials. *Controlled Clin Trials*, 1984; 5:55-66.
12. Fleming TR, Harrington DP, O'Brien PC. Designs for group sequential tests. *Controlled Clin Trials*, 1984; 5:348-361.
13. Fleming TR, Harrington DP. Nonparametric estimation of the survival distribution in censored data. *Communications in Statistics*, 1984; A13:2469-2486.
14. Friedman EL, Garnick MB, Stamper PC, Mauch PM, Harrington DP, Richie JP. Therapeutic guidelines and results in advanced seminoma. *J Clin Oncol*, 1985; 3:1325-1332.

15. Shipp MA, Harrington DP, Klatt MM, Jochelson MS, Pinkus GS, Marshall JL, Rosenthal DS, Skarin AT, Canellos GP. Identification of major prognostic subgroups of patients with large cell lymphoma treated with m- or M- BACOD. *Ann Intern Med*, 1986; 104:757-765.
16. O'Connell MJ, Earle JD, Harrington DP, Johnson GJ, Glick JH. Initial chemotherapy doses for elderly patients with malignant lymphoma (letter). *J Clin Oncol*, 1986; 4:1418.
17. Fleming TR, Harrington DP, O'Sullivan MP. Supremum versions of the log-rank and generalized Wilcoxon statistics. *JASA*, 1987; 82:312-320.
18. Spiers ASD, Moore D, Cassileth PA, Harrington DP, Cummings FJ, Neiman RS, Bennett JM, O'Connell MJ. Remissions in hairy-cell leukemia with Pentostatin (2'-Deoxycoformycin). *N Engl J Med*, 1987; 316:825-830.
19. Ezdinli EZ, Harrington DP, Kucuk O, Silverstein MW, Anderson J, O'Connell MJ. The effect of intensive intermittent maintenance therapy in advanced low-grade non-Hodgkin's lymphoma. *Cancer*, 1987; 60:156-160.
20. O'Connell MJ, Harrington DP, Earle JD, Johnson GJ, Glick JH, Carbone PP, Creech RH, Neiman RS, Mann RB, Silverstein MN. Prospectively randomized clinical trial of three intensive chemotherapy regimens for the treatment of advanced unfavorable histology non-Hodgkin's lymphoma. *J Clin Oncol*, 1987; 5:1329-1339.
21. O'Connell MJ, Harrington DP, Earle JD, Johnson GJ, Glick JH, Neiman RS, and Silverstein MN. Chemotherapy followed by consolidation radiation therapy for treatment of clinical stage II aggressive histology non-Hodgkin's lymphoma. *Cancer*, 1988; 61:1754-1758.
22. Cassileth PA, Harrington DP, Hines JD, Oken MM, Mazza JJ, McGlave P, Bennett JM, O'Connell MJ. Maintenance chemotherapy prolongs remission duration in adult acute nonlymphocytic leukemia. *J Clin Oncol*, 1988; 6(4):583-587.
23. Kalish LA and Harrington DP. Efficiency of balanced treatment allocation for survival analysis. *Biometrics*, 1988; 44:815-821.
24. Anderson JR, Propert KJ, Harrington DP. Guidelines for reporting outcomes of lymphoma trials. Letter to the editor. *J Clin Oncol*, 1988; 6(3):559.
25. Cassileth PA, Harrington DP. Maintenance or no maintenance treatment in AML? Letter to the editor. *J Clin Oncol*, 1988; 6:1521-1522.
26. Gilchrist KW, Harrington DP, Wolf BC, and Neiman RS. Statistical and empirical evaluation of histopathologic reviews for quality assurance in the Eastern Cooperative Oncology Group. *Cancer*, 1988; 62:861-868.
27. Goldstein R, Anderson J, Ash A, Craig B, Harrington DP, Pagano M. Survival analysis software on MS/PC-DOS computers. *J Appl Econometrics*, 1989; 4:393-414.
28. Harrington DP. Discussion of interim analyses: the repeated confidence interval approach, by C Jennison and B Turnbull. *J Royl Stat Soc*, 1989; 51:346-347.
29. Shipp MA, Yeap BY, Harrington DP, Klatt MM, Pinkus GS, Jochelson MS, Rosenthal DS, Skarin AT, and Canellos GP. The m-BACOD combination chemotherapy regimen in large-cell lymphoma: Analysis of the completed trial and comparison with the M-BACOD regimen. *J Clin Oncol*, 1990; 8:84-93.
30. Harrington DP, Andersen J. Common methods of analyzing response data in clinical trials. *Oncology*, 1990; 4(1):95-113.
31. Lipsitz SR, Laird NM, Harrington DP. Finding the design matrix for the marginal homogeneity model. *Biometrika*, 1990; 77(2):353-358.
32. Lipsitz SR, Laird NM, Harrington DP. A jackknife estimate of variance for repeated binary outcomes. *Commun Statist -Theory Meth*, 1990; 19(3):821-845.

33. Lipsitz SR, Harrington DP. Analyzing correlated binary data using SAS. *Computers and Biomedical Research*, 1990; 23:268-282.
34. O'Keane JC, Mack C, Lynch E, Harrington D, Neiman RS. Prognostic correlation of HLA-DR expression in large cell lymphoma as determined by LN3 antibody staining. *Cancer*, 1990; 66:1147-1153.
35. Lipsitz SR, Laird NM, Harrington DP. Maximum likelihood regression methods for paired binary data. *Stat Med*, 1990; 9(12):1517-1525.
36. Curling CA, Rudnick SN, Harrington DP, Moeller DW. Optimization of filtration for the reduction of lung dose from Rn decay products: Part II--Experimental. *Health Phys*, 1990; 59:277-285.
37. Sleeper LA, Harrington DP. Regression splines in the Cox model, with application to covariate effects in liver disease. *J Am Stat Assoc*, 1990; 85(412):941-949.
38. Cassileth PA, Chevart B, Spiers ASD, Harrington DP, Cummings FJ, Neiman RS, Bennett JM, O'Connell MJ. Pentostatin induces durable remissions in hairy cell leukemia. *J Clin Oncol*, 1991; 9:243-246.
39. Lipsitz SR, Laird NM, Harrington DP. Generalized estimating equations for correlated binary data: Using the odds ratio as a measure of association. *Biometrika*, 1991; 78(1):153-160.
40. Wood WC, Barringer TA, Daly JM, Daly MB, Halberg FE, Harrington D, et al (Members of the Consensus Panel for the NIH Development Conference). Treatment of early stage breast cancer: report of the NIH Consensus Panel on early stage breast cancer. *JAMA*, 1991; 3:391-395.
41. Vogler WR, Harrington DP, Winton EF, Lazarus HM, Bennett JM, Cassileth PA, Oken MM. Phase II clinical trial of carboplatin in relapsed and refractory leukemia. *Leukemia*, 1992; 6(10):1072-1075.
42. Lipsitz SR, Laird NM, Harrington DP. A three-stage estimator for studies with repeated and possibly missing binary outcomes. *Applied Statistics*, 1992; 41(1):203-213.
43. Neiman RS, Cain K, Ariei YB, Harrington D, Mann RB, Wolf BC. A comparison between the Rappaport classification and working formulation in cooperative group trials: the ECOG experience. *Hematologic Pathology*, 1992; 6(2):61-70.
44. Andersen J, Harrington D. Meta-analyses need new publication standards. *J Clin Oncol*, 1992; 10:878-880.
45. Gordon LI, Harrington DP, Andersen JW, Colgan J, Glick J, Neiman R, Mann R, Resnick G, Barcos M, Gottlieb A, O'Connell M. Comparison of a second-generation combination chemotherapeutic regimen (m-BACOD) with a standard regimen (CHOP) for advanced diffuse non-Hodgkins lymphoma. *N Engl J Med*, 1992; 327(19):1342-1349.
46. Gordon LI, Harrington DP, Andersen JW. Reply to a letter to the N Engl J Med Editor. Re: Comparison of a second-generation combination chemotherapeutic regimen (m-BACOD) with a standard regimen (CHOP) for advanced diffuse non-Hodgkins lymphoma. *N Engl J Med*, 1993; 328:581.
47. Shipp MA, Harrington DP, et al. for The International Non-Hodgkin's Lymphoma Prognostic Factors Project. A predictive model for aggressive non-Hodgkin's lymphoma. *N Engl J Med*, 1993; 329:987-94.
48. Lipsitz SR, Laird NM, Harrington DP. Weighted least squares analysis of repeated categorical measurements with outcomes subject to nonresponse. *Biometrics*, 1994; 50:11-24.

49. Harrington D, Crowley J, George SL, Pajak T, Redmond C, Wieand S. The case against independent monitoring committees. *Stat Med*, 1994; 13:1411-1414.
50. Oken MM, Harrington DP, Abramson N, Kyle RA, Knospe W, Glick JH. Comparison of melphalan and prednisone with vincristine, carmustine, melphalan, cyclophosphamide, and prednisone in the treatment of multiple myeloma. *Cancer*, 1997; 79:1561-7.
51. Harrington DP. The aftermath of falsified data in breast cancer trials. *Chance*, 1997; 10(4):6-8.
52. Rogus JJ, Harrington DP, Jorgenson E, Xu X. Effectiveness of extreme discordant sib pairs to detect oligogenic disease loci. *Genetics Epidemiology*, 1997; 14:879-884.
53. Glick JH, Young ML, Harrington DP, Schilsky RL, Beck T, Neiman R, Fisher RI, Peterson BA, Oken MM. MOPP/ABV Hybrid chemotherapy for advanced Hodgkin's disease significantly improves failure-free and overall survival: The 8-year results of the intergroup trial. *J Clin Oncol*, 1998; 16(1):19-26.
54. Troxel AB, Harrington DP, Lipsitz SR. Analysis of longitudinal data with non-ignorable non-monotone missing values. *Appl Statist*, 1998; 47(3):425-438.
55. Troxel AB, Lipsitz SR, Harrington DP. Marginal models for the analysis of longitudinal measurements with nonignorable non-monotone missing data. *Biometrika*, 1998; 85(3): 661-672.
56. Meta Analysis Group in Cancer (Harrington DP, et al.). Toxicity of fluorouracil in patients with advanced colorectal cancer: effect of administration schedule and prognostic factors. *J Clin Oncol*, 1998; 16(11):3537-3541.
57. Cassileth PA, Harrington DP, Appelbaum FR, Lazarus HM, Rowe JM, Paietta E, Willman C, Hurd DD, Bennett JM, Blume KG, Head DR, Wiernik PH. Chemotherapy compared with autologous or allogeneic bone marrow transplantation in the management of acute myeloid leukemia in first remission. *N Engl J Med*, 1998; 339(23):1649-1656.
58. Harrington DP. The tea leaves of small trials. Editorial. *J Clin Oncol* 1999;17(5):1336-1338.
59. Anderson JR, Harrington D. The management of interim analyses in drug development. Letter to the Editor. *Stat Med*, 1999; 18:2063-2065.
60. Harrington DP. The randomized clinical trial. *J Am Stat Assoc*, 2000; 95(449): 312-315.
61. Bernardo MVP, Lipsitz SR, Harrington DP, Catalano PJ. Sample size calculations for failure time random variables in non-randomized studies. *The Statistician*, 2000; 49:31-40.
62. Slovak ML, Kopecky KJ, Cassileth PA, Harrington DH, Theil KS, Mohamed A, Paietta E, Willman CL, Head DR, Rowe JM, Forman SJ, Appelbaum FR, for the Southwest Oncology Group and the Eastern Cooperative Oncology Group. Karyotypic analysis predicts outcome of preremission and postremission therapy in adult acute myeloid leukemia: a Southwest Oncology Group/Eastern Cooperative Oncology Group study. *Blood*, 2000; 96(13):4075-4083.
63. Bernardo MVP, Harrington DP. Sample size calculations for the two-sample problem using the multiplicative intensity model. *Stat Med*, 2001; 20:557-579.
64. Jones CL, Harrington DP. Omnibus tests of the Martingale assumption in the analysis of recurrent failure time data. *Lifetime Data Analysis*, 2001; 7:157-171.
65. Fonseca R, Oken MM, Harrington D, Bailey RJ, Van Wier SA, Henderson KJ, Kay NE, Van Ness B, Greipp PR, Dewald GW. Deletions of chromosome 13 in multiple myeloma identified by interphase FISH usually denote large deletions of the q arm or monosomy. *Leukemia*, 2001; 15:981-986.

66. Xu R, Harrington DP. A semiparametric estimate of treatment effects with censored data. *Biometrics*, 2001; 57:875-885.
67. Sweeney CJ, Zhu J, Sandler AB, Schiller J, Belani CP, Langer C, Krook J, Harrington D, Johnson DH. Outcome of patients with a performance status of 2 in Eastern Cooperative Oncology Group Study E1594: A Phase III trial in patients with metastatic nonsmall cell lung carcinoma. *Cancer*, 2001; 92:2639-2647.
68. Fonesca R, Harrington D, Oken MM, Dewald GW, Bailey RJ, Van Wier SA, Henderson KJ, Blood EA, Rajkumar SV, Kay NE, Van Ness B, Greipp PR. Biological and prognostic significance of interphase fluorescence in situ hybridization detection of chromosome 13 abnormalities ( $\Delta 13$ ) in multiple myeloma: an Eastern Cooperative Oncology Group study. *Cancer Research* 2002; 62(3):715-720.
69. Chen M-H, Harrington DP, Ibrahim JG. Bayesian cure rate models for malignant melanoma: a case-study of Eastern Cooperative Oncology Group Trial E1690. *Appl Statist* 2002; 51(2):135-150.
70. Fonseca R, Blood EA, Oken MM, Kyle RA, Dewald GW, Bailey RJ, VanWier SA, Henderson KJ, Hoyer JD, Harrington D, Kay NE, Van Ness B, Greipp PR. Myeloma and the t(11;14)(q13;q32); evidence for a biologically defined unique subset of patients. *Blood* 2002; 99(10):3735-3741.
71. Schiller JH, Harrington D, Belani CP, Langer C, Sandler A, Krook J, Zhu J, Johnson DH, for the Eastern Cooperative Oncology Group. Comparison of four chemotherapy regimens for advanced non-small-cell lung cancer. *N Engl J Med* 2002; 346:92-98.
72. Huang J, Harrington D. Penalized partial likelihood regression for right-censored data with bootstrap selection of the penalty parameter. *Biometrics* 2002; 58:781-791.
73. Ratcliffe AA, Hill AG, Harrington DP, Walraven G. Reporting of fertility events by men and women in rural Gambia. *Demography* 2002; 39(3):573-86.
74. Fonseca R, Blood E, Rue M, Harrington D, Oken MM, Kyle RA, Dewald GW, Van Ness B, Van Wier SA, Henderson KJ, Bailey RJ, Greipp PR. Clinical and biologic implications of recurrent genomic aberrations in myeloma. *Blood* 2003; 101:4569-4575.
75. The International Myeloma Working Group (D. Harrington-participant). Criteria for the classification of monoclonal gammopathies, multiple myeloma and related disorders: a report of the International Working Group. *Br J Haematol* 2003; 121:749-757.
76. Joffe S, Harrington DP, George SL, Emanuel EJ, Budzinski LA, Weeks JC. Satisfaction of the uncertainty principle in cancer clinical trials: retrospective cohort analysis. *BMJ* 2004; 328(7454): 1463.
77. Huang J, Harrington D. Dimension reduction in the linear model for right-censored data: predicting the change in HIV-1 RNA levels using clinical and protease gene mutation data. *Lifetime Data Analysis*, 2004; 10(4): 425-443.
78. Ayanian J, et al. Understanding cancer treatment and outcomes: the Cancer Care Outcomes Research and Surveillance Consortium. *Journal of Clinical Oncology*, 2004; 22(15):2992-6.
79. Huang J, Harrington DP. Iterative partial least squares with right-censored data analysis: a comparison to other dimension reduction techniques. *Biometrics*, 2005; 61(1):17-24.
80. Xu R, Vaida F, Harrington DP. Using profile likelihood for model selection with application to proportional hazards mixed models. Submitted, 2005.

#### **Books, Book Reviews, and Monographs:**

1. Hirsch ED Jr, Harrington DP. Measuring the communicative effectiveness of prose. In: Dominic, Frederickson, eds. *Writing*. New Jersey: Erlbaum Associates, 1981:189-207.
2. Fleming TR, Green SJ, Harrington DP. Performing serial testing of treatment effects. In: Brown M, Kay R, Schuerlen H, eds. *Clinical Trials in Early Breast Cancer: The Second Heidelberg Symposium*. Birkhauser Verlag, 1982:469-484.
3. Harrington DP, Fleming TR, Green SJ. Procedures for serial testing in censored data. In: Crowley J, Johnson RA, eds. *IMS Monograph Survival Theory*. 1982:269-286. Also to appear in *Medical Information and Statistics*, Springer-Verlag.
4. Fleming TR, Harrington DP. Evaluation of censored survival data test procedures based upon single and multiple statistics. In: Dwivedi E, ed. *Topics in Applied Statistics*. New York: Marcel Dekker, 1985:97-123.
5. Canellos G, Shipp M, Harrington D, Klatt M, et al. Prognostic factors in diffuse large cell lymphoma. Proceedings of a Symposium held November 14-17, 1985 at Marco Island, Florida. In: Wiley J & Sons, eds. *Projects in Medicine*, 1986:11-16.
6. Skarin A, Canellos G, Rosenthal D, Case D Jr, Pinkus G, Harrington D. Moderate dose m-BACOD in advanced diffuse large cell lymphoma: An Interim Report. Proceedings of a symposium held November 14-17, 1985 at Marco Island, Florida. In: Wiley J & Sons, eds. *Projects in Medicine*, 1986:23-29.
7. Harrington DP. Review of *Statistical Analysis of Counting Processes* by Martin Jacobson. *Bulletin of the American Mathematical Society*, 1983; 9:401-407.
8. Harrington DP. Review of *The Design and Analysis of Sequential Clinical Trials*, by John Whitehead. *Journal of the American Statistical Association*, 1985; 80:244.
9. Cassileth PA, Harrington DP, Hines JD, Oken MM, Mazza JJ, McGlave P, Bennett JM, Lynch E, O'Connell MJ. Comparison of Postremission Therapies in Adult Acute Myeloid Leukemia: Preliminary Analysis of an ECOG Study. In: *Acute Leukemias II*. Springer Verlag, 1990:267-270.
10. Fleming TR, Harrington DP. *Counting Processes and Survival Analysis*. New York: John Wiley and Sons, 1991.
11. Harrington DP, Whittemore AS. Defining, identifying, and studying high-risk families: developing cohorts for epidemiologic study. *J Natl Cancer Instit Monogr* 1995; 17:91-94.
12. Harrington DP, Neuberg DS. *Statistical Principles of Clinical Trials*. In: Brain MC, Carbone PC, ed. *Current Therapy in Hematology-Oncology*, 5<sup>th</sup> edition. St. Louis: Mosby, 1995:39-49.
13. Harrington DP. Linear Rank Tests in Survival Analysis. In: Armitage P, Colton T, eds. *Encyclopedia of Biostatistics*. Vol. 3, England, U.K.: John Wiley & Sons, Ltd, 1998: 2263-73.
14. Harrington DP. Partial Likelihood. In: Armitage P, Colton T, eds. *Encyclopedia of Biostatistics*. Vol. 4, England, UK: John Wiley & Sons Ltd, 1998: 3266-68.