REFERENCES

REFERENCES

Acheson, E.D. & Gardner, M.J. (1980) *Asbestos: scientific basis for environmental control of fibres.* In: Wagner, J.C., ed., *Biological Effects of Mineral Fibres (IARC Scientific Publications No. 30)*, Lyon, International Agency for Research on Cancer, pp. 737–754

Adelhardt, M., Møller Jensen, O. & Sand Hansen, H. (1985) Cancer of the larynx, pharynx and oesophagus in relation to alcohol and tobacco consumption among Danish brewery workers. *Dan. med. Bull.*, **32,** 119–123

Andersen, P.K. & Gill, R.D. (1982) Cox's regression model for counting processes: a large sample study. *Ann. Statist.*, **10,** 1110–1120

Andersen, P.K. & Rasmussen, N.K. (1982) *Admissions to Psychiatric Hospitals among Women Giving Birth and Women Having Induced Abortion. A Statistical Analysis of a Counting Process Model.* Unpublished technical report from Statistical Research Unit, Copenhagen

Andersen, P.K., Borch-Johnsen, K., Deckert, T., Green, A., Hougaard, P., Keiding, N. & Kreiner, S. (1985) A Cox regression model for the relative mortality and its application to diabetes mellitus survival data. *Biometrics,* **41,** 921–932

Anderson, S., Auquier, A., Hauck, W.W., Oakes, D., Vandaele, W. & Weisberg, H.I. (1980) *Statistical Methods for Comparative Studies,* New York, Wiley

Aranda-Ordaz, F.J. (1983) An extension of the proportional hazards model for grouped data. *Biometrics,* **39,** 109–117

Armenian, K. & Lilienfeld, A.M. (1974) The distribution of incubation periods of neoplastic diseases. *Am. J. Epidemiol.*, **99,** 92–100

Armitage, P. (1955) Tests for linear trend in proportions and frequencies. *Biometrics,* **11,** 375–386

Armitage, P. (1966) The chi-square test for heterogeneity in proportions after adjustment for stratification. *J. R. stat. Soc. B,* **26,** 150–163

Armitage, P. (1971) *Statistical Methods in Medical Research,* Oxford, Blackwell

Armitage, P. & Doll, R. (1961) *Stochastic models for carcinogenesis.* In: *Proceedings of the 4th Berkeley Symposium on Mathematical Statistics and Probability: Biology and Problems of Health,* Berkeley, University of California Press, pp. 19–38

Baker, R. J. & Nelder, J.A. (1978) *The GLIM System: Release 3,* Oxford, Numerical Algorithms Group

Barlow, W.E. (1986) General relative risk models in stratified epidemiologic studies. *Appl. Stat.*, **34,** 246–257

Bartholomew, D.J. (1963) The sampling distribution of an estimate arising in life testing. *Technometrics,* **5,** 361–374

Beasley, R.P., Hwang, L.Y., Lin, C.C. & Chien, C.S. (1981) Hepatocellular carcinoma and hepatitis B virus. A prospective study of 22,707 men in Taiwan. *Lancet,* **ii,** 1129–1133

Beebe, G.W., Ishida, M. & Jablon, S. (1962) Studies of the mortality of A-bomb survivors. I. Plan of study and mortality in the medical subsample (selection 1), 1950–1958. *Radiat. Res.,* **16,** 253–280

Beebe, G.W., Kato, H. & Land, C.E. (1977) *Mortality Experience of Atomic Bomb Survivors 1950–74, Life Span Study Report 8 (Technical Report RERF TR 1–77),* Hiroshima, Radiation Effects Research Foundation

Benjamin, B. (1968) *Health and Vital Statistics,* London, Allen & Unwin

Beral, V. (1974) Cancer of the cervix: a sexually transmitted infection? *Lancet,* **i,** 1037–1040

Beral, V., Fraser, P. & Chilvers, C. (1978) Does pregnancy protect against ovarian cancer? *Lancet,* **i,** 1083–1087

Bernstein, L., Anderson, J. & Pike, M.C. (1981) Estimation of the proportional hazard in two treatment clinical trials. *Biometrics,* **37,** 513–519

Berry, G. (1980) Dose-response in case-control studies. *J. Epidemiol. Community Health,* **34,** 217–222

Berry, G., Gilson, J.C., Holmes, S., Lewinsohn, H.A. & Roach, S.A. (1979) Asbestosis: a study of dose-response relationship in an asbestos textile factory. *Br. J. ind. Med.,* **36,** 98–112

Bithell, J. & Stewart, A. (1975) Pre-natal irradiation and childhood malignancy: a review of British data from the Oxford survey. *Br. J. Cancer,* **31,** 271–287

Bjarnason, O., Day, N.E., Snaedal, G. & Tulinius, H. (1974) The effect of year of birth on breast cancer incidence in Iceland. *Int. J. Cancer,* **13,** 689–696

Blot, W.J., Morris, L.E., Stroube, R., Tagnon, I. & Fraumeni, J.F. (1980) Lung and laryngeal cancers in relation to shipyard employment in coastal Virginia. *J. natl Cancer Inst.,* **65,** 571–575

Boice, J.D., Jr & Monson, R.R. (1977) Breast cancer in women after repeated fluoroscopic examinations of the chest. *J. natl Cancer Inst.,* **59,** 823–832

Boice, J.D. & Day, N.E.; Andersen, A., Brinton, L.A., Brown, R., Choi, N.W., Clarke, E.A., Coleman, M.P., Curtis, R.E., Flannery, J.T., Hakama, M., Hakulinen, T., Howe, G.R., Jensen, O.M., Kleinerman, R.A., Magnin, D., Magnus, K., Makela, K., Malker, B., Miller, A.B., Nelson, N., Patterson, C.C., Pettersson, F., Pompe-Kirn, V., Primic-Zakelj, M., Prior, P., Ravnihar, B., Skeet, R.G., Skjerven, J.E., Smith, P.G., Sok, M., Spengler, R.F., Storm, H.H., Stovall, M., Tomkins, G.W.O. & Wall, C. (1985) Second cancers following radiation treatment for cervical cancer. An international collaboration among cancer registries. *J. natl Cancer Inst.,* **74,** 955–975

Borgan, O. (1984) Maximum likelihood estimation in parametric counting process models, with applications to censored failure time data. *Scand. J. Stat.,* **11,** 1–16

Börzsönyi, M., Day, N.E., Lapis, K. & Yamasaki, H., eds (1984) *Models, Mechanisms*

and Etiology of Tumour Promotion (*IARC Scientific Publications No. 56*), Lyon, International Agency for Research on Cancer

Breslow, N.E. (1974) Covariance analysis of censored survival data. *Biometrics,* **30,** 89–100

Breslow, N.E. (1975) Analysis of survival data under the proportional hazards model. *Int. stat. Rev.*, **43,** 55–68

Breslow, N.E. (1976) Regression analysis of the log odds ratio: a method for retrospective studies. *Biometrics,* **32,** 409–416

Breslow, N.E. (1979) Statistical methods for censored survival data. *Environ. Health Perspect.*, **32,** 181–192

Breslow, N.E. (1981) Odds ratio estimators when the data are sparse. *Biometrika,* **68,** 73–84

Breslow, N.E. (1984a) Extra-Poisson variation in log-linear models. *Appl. Stat.*, **33,** 38–44

Breslow, N.E. (1984b) Elementary methods of cohort analysis. *Int. J. Epidemiol.*, **13,** 112–115

Breslow, N.E. (1985a) Multivariate cohort analysis. *Natl Cancer Inst. Monogr,* **67,** 149–156

Breslow, N.E. (1985b) *Cohort analysis in epidemiology.* In: Atkinson, A.C. & Fienberg, S.E. eds, *A Celebration of Statistics,* New York, Springer, pp. 109–143

Breslow, N.E. & Crowley, J.C. (1974) A large sample study of the life table and product limit estimators under random censorship. *Ann. Stat.*, **2,** 437–453

Breslow, N.E. & Day, N.E. (1975) Indirect standardization and multiplicative models for rates, with reference to the age adjustment of cancer incidence and relative frequency data. *J. chron. Dis.*, **28,** 289–303

Breslow, N.E. & Day, N.E. (1980) *Statistical Methods in Cancer Research, Vol. I, The Analysis of Case-Control Studies* (*IARC Scientific Publications No. 32*), Lyon, International Agency for Research on Cancer

Breslow, N.E. & Day, N.E. (1985) *The standardized mortality ratio.* In: Sen, P.K., ed., *Biostatistics*: *Statistics in Biomedical, Public Health and Environmental Sciences,* New York, Elsevier, pp. 55–74

Breslow, N.E. & Langholz, B. (1987) Nonparametric estimation of relative mortality functions. *J. chron. Dis.* (in press)

Breslow, N.E. & Patton, J. (1979) *Case-control analysis of cohort studies.* In: Breslow, N.E. & Whittemore, A.S., eds, *Energy and Health,* Philadelphia, SIAM, pp. 226–242

Breslow, N.E. & Storer, B.E. (1985) General relative risk functions for case-control studies. *Am. J. Epidemiol.*, **122,** 149–162

Breslow, N.E., Lubin, J.H., Marek, P. & Langholz, B. (1983) Multiplicative models and cohort analysis. *J. Am. stat. Assoc.*, **78,** 1–12

Breslow, N.E., Edler, L. & Berger, J. (1984) A two-sample censored data rank test for acceleration. *Biometrics,* **40,** 1049–1062

Brown, C.C. (1977) The shape of the dose-response curve for radiation carcinogenesis: extrapolation to low doses. *Radiat. Res.*, **71,** 34–50

Brown, C.C. & Chu, K. (1987) Use of multistage models to infer stage affected by

carcinogenic exposure: example of lung cancer and cigarette smoking. *J. chron. Dis.* (in press)

Brown, C.C. & Chu, K.C. (1983a) A new method for the analysis of cohort studies: implications of the multistage theory of carcinogenesis applied to occupational arsenic exposure. *Environ. Health Perspect.*, **150,** 293–308

Brown, C.C. & Chu, K.C. (1983b) Implications of the multi-stage theory of carcinogenesis applied to occupational arsenic exposure. *J. natl Cancer Inst.*, **70,** 455–463

Brown, C.C. & Green, S.B. (1982) Additional power computations for designing comparative Poisson trials. *Am. J. Epidemiol.*, **115,** 752–758

Buckley, J.D., Harris, R.W.C., Doll, R., Vessey, M.P. & Williams, P.T. (1981) Case-control study of the husbands of women with dysplasia or carcinoma of the cervix uteri. *Lancet,* **ii,** 1010–1015

Casagrande, J.T., Pike, M.C. & Smith, P.G. (1978a) The power function of the exact test for comparing two binomial distributions. *Appl. Stat.*, **27,** 1–35

Casagrande, J.T., Pike, M.C. & Smith, P.G. (1978b) An improved approximate formula for calculating sample sizes for comparing two binomial distributions. *Biometrics,* **34,** 483–486

Case, R.A.M. & Pearson, J.T. (1954) Tumours of the urinary bladder in workmen engaged in the manufacture and use of certain dyestuff intermediates in the British chemical industry. Part II. Further considerations of the role of aniline and of the manufacture of auramine and magenta (fuchsine) as possible causative agents. *Br. J. ind. Med.*, **11,** 213–216

Case, R.A.M. & Pearson, J.T. (1957) *Tables for comparative composite cohort analysis.* In: *Cancer Statistics for England and Wales, 1901–55,* London, Her Majesty's Stationery Office, pp. 37–99

Case, R.A.M., Hosker, M.E., McDonald, D.B. & Pearson, J.T. (1954) Tumours of the urinary bladder in workmen engaged in the manufacture and use of certain dyestuff intermediates in the British chemical industry. Part I. The role of aniline, benzidine, alpha-naphthylamine and beta-naphthylamine. *Br. J. ind. Med.*, **11,** 75–104

Chapman, D.G. & Nam, J.M. (1968) Asymptotic power of chi square tests for linear trends in proportions. *Biometrics,* **16,** 315–327

Chiang, C.L. (1961) *Standard Error of the Age-adjusted Death Rate* (*Vital Statistics – Special Report. Selected Studies No. 9*), Washington DC, US Department of Health, Education, and Welfare

Clayton, D.G. (1982) The analysis of prospective studies of disease aetiology. *Commun. Stat. Theory. Meth.*, **11,** 2129–2155

Clayton, D.G. (1985) Using test-retest reliability data to improve estimates of relative risk: an application of latent class analysis. *Stat. Med.*, **4,** 445–455

Clayton, D.G. & Kaldor, J.M. (1985) Heterogeneity models as an alternative to proportional hazards in cohort study data. *Bull. Int. stat. Inst.*, 3.2, 1–16

Clayton, D.G. & Kaldor, J.M. (1987) Diagnostic plots for departures from proportional hazards in cohort study data. *J. chron. Dis.* (in press)

Coleman, M., Douglas, A., Hermon, C. & Peto, J. (1986) Cohort study analysis with a FORTRAN computer program. *Int. J. Epidemiol.*, **15,** 134–137

Committee on the Biological Effects of Ionizing Radiation (1980) *The Effects on Populations of Exposure to Low Levels of Ionizing Radiation,* National Academy of Sciences – National Research Council, Washington DC, National Academy Press

Cook, P.J., Doll, R. & Fellingham, S.A. (1969) A mathematical model for the age distribution of cancer in man. *Int. J. Cancer,* **4,** 93–112

Cook, R.D. & Weisberg, S. (1982) *Residuals and Influence in Regression,* London, Chapman & Hall

Cornfield, J. (1951) A method of estimating comparative rates from clinical data. Application to cancer of the lung, breast and cervix. *J. natl Cancer Inst.,* **11,** 1269–1275

Cornfield, J. (1956) *A statistical problem arising from retrospective studies.* In: Neyman, J., ed, *Proceedings of the Third Berkeley Symposium,* Vol. IV, Berkeley, University of California Press, pp. 133–148

Court Brown, W.M. & Doll, R. (1957) Mortality from cancer and other causes after radiotherapy for ankylosing spondylitis. *Br. med. J.,* **ii,** 1327–1332

Cox, D.R. (1972) Regression models and life tables (with discussion). *J. R. stat. Soc. B,* **34,** 187–220

Cox, D.R. (1975) Partial likelihood. *Biometrika,* **62,** 269–276

Cox, D.R. & Hinkley, D.V. (1974) *Theoretical Statistics,* London, Chapman & Hall

Cox, D.R. & Oakes, D. (1984) *Analysis of Survival Data,* London, Chapman & Hall

Crump, K.S. & Howe, R.B. (1984) The multi-stage model with a time dependent dose pattern: application to carcinogenic risk assessment. *Risk Anal.,* **4,** 163–176

Darby, S.C. (1984) *Modelling age- and time-dependent changes in the rates of radiation-induced cancers.* In: Prentice, R.L. & Thompson, D.J., eds, *Atomic Bomb Survivor Data: Utilization and Analysis,* Philadelphia, SIAM, pp. 67–80

Darby, S.C., Nakashima, E. & Kato, H. (1985) A parallel analysis of cancer mortality among atomic bomb survivors and with ankylosing spondylitis given X-ray therapy. *J. natl Cancer Inst.,* **75,** 1–21

Day, N.E. (1976) *A new measure of age standardized incidence, the cumulative rate.* In: Waterhouse, J.A.H., Muir, C.S., Correa, P. & Powell, J., eds, *Cancer Incidence in Five Continents, Vol. III* (*IARC Scientific Publications No. 15*), Lyon, International Agency for Research on Cancer, pp. 443–452

Day, N.E. (1985) *Epidemiological methods for the assessment of human cancer risk.* In: Krewski, D., Munro, I. & Clayson, D., eds, *Toxicological Risk Assessment,* New York, CRC Press, pp. 3–15

Day, N.E. & Boice, J.D., Jr, eds (1983) *Second Cancer in Relation to Radiation Treatment for Cervical Cancer. A Cancer Registry Collaboration* (*IARC Scientific Publications No. 52*), Lyon, International Agency for Research on Cancer

Day, N.E. & Brown, C.C. (1980) Multistage models and the primary prevention of cancer. *J. natl Cancer Inst.,* **64,** 977–989

Day, N.E. & Byar, D.P. (1979) Testing hypotheses in case-control studies – equivalence of Mantel–Haenszel statistics and logit score tests. *Biometrics,* **35,** 623–630

Day, N.E., Byar, D.P. & Green, S.B. (1980) Overadjustment in case-control studies. *Am. J. Epidemiol.,* **112,** 696–706

Day, N.E., Boice, J.D., Jr, Andersen, A., Brinton, L.A., Brown, R., Choi, N.W., Clarke, E.A., Coleman, M.P., Curtis, R.E., Flannery, J.T., Hakama, M., Hakulinen, T., Howe, G.R., Jensen, O.M., Kleinerman, R.A., Magnin, D., Magnus, K., Makela, K., Malker, B., Miller, A.B., Nelson, N., Patterson, C.C., Pettersson, F., Pompe-Kirn, V., Primic-Zakelj, M., Prior, P., Ravnihar, B., Skeet, R.G., Skjerven, J.E., Smith, P.G., Sok, M., Spengler, R.F., Storm, H.H., Tomkins, G.W.O. & Wall, C. (1983) *Summary chapter.* In: Day, N.E. & Boice, J.R., Jr, eds, *Second Cancer in Relation to Radiation Treatment for Cervical Cancer. A Cancer Registry Collaboration (IARC Scientific Publications No. 52)*, Lyon, International Agency for Research on Cancer, pp. 137–181

Decarli, A., Peto, J., Piolatto, G. & La Vecchia, C. (1985) Bladder cancer mortality of workers exposed to aromatic amines: analysis of models of carcinogenesis. *Br. J. Cancer,* **51,** 707–712

Decouflé, P., Thomas, T.L. & Pickle, L.W. (1980) Comparison of the proportionate mortality ratio and standardized mortality ratio risk measures. *Am. J. Epidemiol.,* **111,** 263–269

Doering, C.R. & Forbes, A.L. (1939) Adjusted death rates. *Proc. natl Acad. Sci. USA,* **25,** 461–467

Doll, R. (1971) The age distribution of cancer: implications for models of carcinogenesis. *J. R. stat. Soc. A,* **134,** 133–156

Doll, R. (1978) An epidemiological perspective of the biology of cancer. *Cancer Res.,* **38,** 3573–3583

Doll, R. & Cook, P.J. (1967) Summarizing indices for comparison of cancer incidence data. *Int. J. Cancer,* **2,** 269–279

Doll, R. & Hill, A.B. (1950) Smoking and carcinoma of the lung. Preliminary report. *Br. med. J.,* **iii,** 739–748

Doll, R. & Hill, A.B. (1952) A study of the aetiology of carcinoma of the lung. *Br. med. J.,* **iv,** 1271–1286

Doll, R. & Hill, A.B. (1954) The mortality of doctors in relation to their smoking habits. A preliminary report. *Br. med. J.,* **ii,** 1451–1455

Doll, R. & Hill, A.B. (1966) Mortality of British doctors in relation to smoking: observations on coronary thrombosis. *Natl Cancer Inst. Monogr.,* **19,** 205–268

Doll, R. & Peto, R. (1976) Mortality in relation to smoking: 20 years' observations on male British doctors. *Br. med. J.,* **ii,** 1525–1536

Doll, R. & Peto, R. (1978) Cigarette smoking and bronchial carcinoma: dose and time relationships among regular smokers and life-long non-smokers. *J. Epidemiol. Community Health,* **32,** 303–313

Doll, R., Fisher, R.E.W., Gammon, E.J., Gunn, W., Hughes, G.O., Tyrer, F.H. & Wilson, W. (1965) Mortality of gasworkers with special reference to cancers of the lung and bladder, chronic bronchitis, and pneumoconiosis. *Br. J. ind. Med.,* **22,** 1–12

Doll, R., Muir, C. & Waterhouse, J., eds (1970a) *Cancer Incidence in Five Continents, Vol. II,* Heidelberg, Springer-Verlag

Doll, R., Morgan, L.G. & Speizer, F. (1970b) Cancers of the lung and nasal sinuses in nickel workers. *Br. J. Cancer,* **24,** 623–632

Doll, R., Vessey, M.P., Beasley, R.W.R., Buckley, A.R., Fear, E.C., Fisher, R.E.W., Gammon, E.J., Gunn, W., Hughes, G.O., Lee, K., & Norman-Smith, B. (1972) Mortality of gasworkers – final report of a prospective study. *Br. J. ind. Med.*, **29**, 394–406

Doll, R., Gray, R., Hafner, B. & Peto, R. (1980) Mortality in relation to smoking: 22 years' observations on female British doctors. *Br. med. J.*, **ii**, 967–971

Duck, B.W. & Carter, J.T. (1976) Letter to the editor. *Lancet*, **ii**, 195

Duck, B.W., Carter, J.T. & Coombes, E.J. (1975) Mortality study of workers in a polyvinyl-chloride production plant. *Lancet*, **ii**, 1197–1199

Elveback, L.R. (1966) Discussion of 'Indices of mortality and tests of their statistical significance'. *Human Biol.*, **38**, 322–324

Enterline, P.E. (1975) Not uniformly true for each cause of death (letter). *J. occup. Med.*, **17**, 127–128

Enterline, P.E. (1976) Pitfalls in epidemiologic research: an examination of the asbestos literature. *J. occup. Med.*, **18**, 150–156

Epstein, B. (1954) Truncated life tests in the exponential case. *Ann. math. Stat.*, **23**, 555–564

Fienberg, S.E. (1980) *The Analysis of Cross-classified Categorical Data*, Cambridge, Mass., MIT Press

Fleiss, J.L. (1973) *Statistical Methods for Rates and Proportions*, New York, Wiley

Fleiss, J.L., Tytun, A. & Ury, H.K. (1980) A simple approximation for calculating sample sizes for comparing independent proportions. *Biometrics*, **36**, 343–346

Fox, A.J. & Goldblatt, P.O. (1982) *Longitudinal Study. Socio-demographic Mortality Differentials*, London, Her Majesty's Stationery Office

Freeman, D.H. & Holford, T.R. (1980) Summary rates. *Biometrics*, **36**, 195–203

Frome, E.L. (1983) The analysis of rates using Poisson regression models. *Biometrics*, **39**, 665–674

Frome, E.L. & Checkoway, H. (1985) Use of Poisson regression models in estimating incidence ratios and rates. *Am. J. Epidemiol.*, **121**, 309–323

Fujita, S. (1984) *Potential additional data sources for dosimetry and biological re-evaluation.* In: Prentice, R.L. & Thompson, D.J., eds, *Atomic Bomb Survivor Data: Utilization and Analysis*, Philadelphia, SIAM, pp. 183–193

Gail, M. (1973) The determination of sample sizes for trials involving several independent 2×2 tables. *J. chron. Dis.*, **226**, 669–673

Gail, M. (1974) Power computations for designing comparative Poisson trials. *Biometrics*, **30**, 231–237

Gail, M.H., Lubin, J.H. & Rubinstein, L.V. (1981) Likelihood calculations for matched case-control studies and survival studies with tied death times. *Biometrika*, **68**, 703–707

Gardner, M.J. & Munford, A.G. (1980) The combined effect of two factors on disease in a case-control study. *Appl. Stat.*, **29**, 276–281

Gart, J.J. (1971) The comparison of proportions: a review of significance tests, confidence intervals, and adjustments for stratification. *Int. stat. Rev.*, **39**, 148–169

Geser, A. & de-Thé, G.B. (1972) *Does the Epstein–Barr virus play an etiological role in Burkitt's lymphoma? The planning of a longitudinal seroepidemiological survey in*

the West Nile district, Uganda. In: Biggs, P.M., de-Thé, G. & Payne, L.N., eds, *Oncogenesis and Herpesviruses* (*IARC Scientific Publications No. 2*), Lyon, International Agency for Research on Cancer, pp. 372–375

Gilbert, E.S. (1983) An evaluation of several methods for assessing the effects of occupational exposure to radiation. *Biometrics,* **39,** 161–171

Gilbert, E.S. (1984) *The effects of random dosimetry errors and the use of data on acute symptoms for dosimetry evaluation.* In: Prentice, R.L. & Thompson, D.J., eds, *Atomic Bomb Survivor Data: Utilization and Analysis,* Philadelphia, SIAM, pp. 170–182

Gilbert, E.S. & Buchanan, J.A. (1984) An alternative approach to analyzing occupational mortality data. *J. occup. Med.,* **11,** 822–828

Gilbert, E.S. & Marks, S. (1979) An analysis of the mortality of workers in a nuclear facility. *Radiat. Res.,* **79,** 122–148

Gillespie, M.J. & Fisher, L. (1979) Confidence bounds for the Kaplan-Meier survival curve estimate. *Ann. Stat.,* **7,** 920–924

Greenland, S. (1982) Interpretation and estimation of summary ratios under heterogeneity. *Stat. Med.,* **1,** 217–227

Greenland, S. (1985) Power, sample size and smallest detectable effect determination for multivariate studies. *Stat. Med.,* **4,** 117–127

Greenwood, M. (1926) *The Errors of Sampling of the Survivorship Tables* (*Reports on Public Health and Statistical Subjects No. 33*), London, His Majesty's Stationery Office, Appendix 1

Grove, R.D. & Hetzel, A.M. (1968) *Vital Statistics Rates in the United States, 1940–1960.* Washington DC, National Center for Vital Statistics

Haberman, S.J. (1974) *The Analysis of Frequency Data,* Chicago, University of Chicago Press

Haenszel, W. (1950) A standardized rate for mortality defined in units of lost years of life. *Am. J. public Health,* **40,** 17–26

Haenszel, W., Loveland, D. & Sirken, M.G. (1962) Lung cancer mortality as related to residence and smoking histories. *J. natl Cancer Inst.,* **28,** 947–1001

Hall, W.J. & Wellner, J.A. (1980) Confidence bands for a survival curve from censored data. *Biometrika,* **67,** 133–143

Hamilton, M.A. (1982) Detection of interactive effects in carcinogenesis. *Biometr. J.,* **24,** 483–491

Hammond, E.C. (1966) Smoking in relation to the death rates of one million men and women. *Natl Cancer Inst. Monogr.,* **19,** 127–204

Hammond, E.C., Selikoff, I.J. & Seidman, H. (1979) Asbestos exposure, cigarette smoking and death rates. *Ann. N.Y. Acad. Sci.,* **330,** 473–490

Hartge, P., Hoover, R.N., West, D.W. & Lyon, J.L. (1983) Coffee drinking and risk of bladder cancer. *J. natl Cancer Inst.,* **70,** 1021–1024

Hill, I.D. (1972) Computing man years at risk. *Br. J. prev. soc. Med.,* **26,** 132–134

Hirayama, T. (1975) *Smoking and cancer: a prospective study on cancer epidemiology based on a census population in Japan.* In: *Proceedings of the Third World Conference on Smoking and Health,* Vol. II, Washington DC, Department of Health, Education, and Welfare, pp. 65–72

Hoaglin, D.C. & Welsh, R.F. (1978) The hat matrix in regression and ANOVA. *Am. Stat.*, **32,** 17–22

Hobbs, M.S.T., Woodward, S., Murphy, B., Musk, A.W. & Elder, J.E. (1980) *The incidence of pneumoconiosis, mesothelioma and other respiratory cancer in men engaged in mining and milling crocidolite in Western Australia.* In: Wagner, J.C., ed., *Biological Effects of Mineral Fibres (IARC Scientific Publications No. 30)*, Lyon, International Agency for Research on Cancer, pp. 615–625

Hoem, J.M. (1984) Statistical analysis of a multiplicative model and its application to the standardization of vital rates. A review. *Int. stat. Rev.* (in press)

Holford, T.R. (1980) The analysis of rates and of survivorship using log-linear models. *Biometrics,* **36,** 229–306

Howe, G.R. (1982) *Epidemiology of radiogenic breast cancer.* In: Boice, J.D., Jr & Fraumeni, J.R., Jr, eds, *Radiation Carcinogenesis. Epidemiology and Biological Significance,* New York, Raven Press, pp. 119–129

Huber, P.J. (1983) *Robust Statistics,* New York, Wiley

Hutchinson, W.B., Thomas, D.B., Hamlin, W.B., Roth, G.J., Peterson, A.V. & Williams, B.J. (1980) Risk of breast cancer in women with benign breast disease. *J. natl Cancer Inst.*, **65,** 13–20

Hutchison, G.B. (1968) Leukemia in patients with cancer of the cervix uteri treated with radiation. A report covering the first 5 years of an international study. *J. natl Cancer Inst.*, **40,** 951–982

IARC (1982a) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans,* Supplement 4, *Chemicals, Industrial Processes and Industries Associated with Cancer in Humans (IARC Monographs, Volumes 1 to 29)*, Lyon, International Agency for Research on Cancer

IARC (1982b) *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans,* Vol. 29, *Some Industrial Chemicals and Dyestuffs,* Lyon, International Agency for Research on Cancer, pp. 93–184

IARC (1983) *Approaches to Classifying Chemical Carcinogens According to Mechanism of Action (IARC Internal Technical Report No. 83/001)*, Lyon, International Agency for Research on Cancer

Infante, P.F., Rinsky, R.A., Wagoner, J.K. & Young, R.J. (1977) Leukaemia in benzene workers. *Lancet,* **ii,** 76–78

Ishimaru, T., Otake, M. & Ichimaru, M. (1979) Dose-response relationship of neutrons and γ rays to leukemia incidence among atomic-bomb survivors in Hiroshima and Nagasaki by type of leukemia, 1950–1971. *Radiat. Res.*, **77,** 377–394

Jensen, O.M. (1979) Cancer morbidity and causes of death among Danish brewery workers. *Int. J. Cancer,* **23,** 454–463

Johansen, S. (1981) Discussion of paper by D. Oakes. *Int. stat. Rev.*, **49,** 258–262

Kahn, H. (1966) The Dorn study of smoking and mortality among US veterans: report on eight and one-half years of observation. *Natl Cancer Inst. Monogr.*, **19,** 1–129

Kalbfleisch, J.D. & Prentice, R.L. (1980) *The Statistical Analysis of Failure Time Data,* New York, Wiley

Kaldor, J.M., Peto, J., Easton, D., Doll, Hermon, C. & Morgan, L. (1986a) Models for respiratory cancer in nickel refinery workers. *J. natl Cancer Inst.*, **77,** 841–848

Kaldor, J.M., Day, N.E., Bana, P., Choi, N.W., Clarke, E.A., Coleman, M.P., Hakama, M., Koch, M., Langmark, F., Neal, F.E., Pettersson, F., Pompe-Kim, V., Prior, P. & Storm, H.H. (1987) Second malignancies following testicular cancer, ovarian cancer and Hodgkin's disease: an international collaborative study among cancer registries. *Int. J. Cancer* (in press)

Kark, J.D., Smith, A.H., Switzer, B.R. & Hames, C.G. (1981) Serum vitamin A (retinol) and cancer incidence in Evans County, Georgia. *J. natl Cancer Inst.*, **66,** 7–16

Keiding, N. (1985a) Standardized mortality ratio and statistical analysis: historical perspective. *Biometrics,* **41,** 109–116

Keiding, N. (1985b) *The Method of the Expected Number of Deaths, 1786–1886–1986 (Research Report No. 85/6),* University of Copenhagen, Statistical Research Unit

Keiding, N. (1987) The method of the expected number of deaths, 1786–1886–1986. *Int. Stat. Rev.*, **55,** 1–20

Kerridge, D. (1958) A new method of standardizing death rates. *Br. J. prev. soc. Med.*, **2,** 154–155

Keyfitz, N. (1966) Sampling variance of the standardized mortality rates. *Human. Biol.*, **38,** 309–317

Kilpatrick, S.J. (1962) Occupational mortality indices. *Pop. Stud.*, **16,** 175–183

Kilpatrick, S.J. (1963) Mortality comparisons in socio-economic groups. *Appl. Stat.*, **12,** 65–86

Kinlen, L.J. (1982) Meat and fat consumption and cancer mortality: a study of strict religious orders in Britain. *Lancet,* **i,** 946–949

Knox, E.G. (1973) Computer simulation of industrial hazards. *Br. J. ind. Med.*, **30,** 54–63

Knudson, A.G. (1971) Mutation and cancer: statistical study of retinoblastoma. *Proc. natl Acad. Sci. USA,* **68,** 820–823

Knudson, A.G. (1985) Hereditary cancer, oncogenes, and antioncogenes. *Cancer Res.*, **45,** 1437–1443

Koopman, J. (1982) Analysing different types of multiple causation (abstract). *Am. J. Epidemiol.*, **116,** 586

Kupper, L.L., McMichael, A.J., Symons, M.J. & Most, B.M. (1978) On the utility of proportional mortality analysis. *J. chron. Dis.*, **31,** 15–22

Land, C.E., Boice, J.D., Jr, Shore, R.E., Norman, J.E. & Tokunaga, M. (1980) Breast risk from low-dose exposures to ionizing radiation: results of parallel analysis of three exposed populations of women. *J. natl Cancer Inst.*, **65,** 353–376

Lee, A.M. & Fraumeni, J.F., Jr (1969) Arsenic and respiratory cancer in man: an occupational study. *J. natl Cancer Inst.*, **42,** 1045–1052

Lee, P.N. (1975) *A model of experimental carcinogenesis and experiments to test it.* In: *Tobacco Research Council Review of Activities, 1970–74,* London, Tobacco Research Council, pp. 28–32

Lee-Feldstein, A. (1983) Arsenic and respiratory cancer in humans: follow-up of copper smelter employees in Montana. *J. natl Cancer Inst.*, **70,** 601–610

Lehman, E.L. (1959) *Testing Statistical Hypotheses,* New York, Wiley

Liddell, F.D.K. (1960) The measurement of occupational mortality. *Br. J. ind. Med.*, **17,** 228–233

Little, A.S. (1952) Estimation of the T-year survival rate from follow-up studies over a limited period of time. *Human Biol.*, **24,** 87–116

Lubin, J.H. & Gail, M.H. (1984) Biased selection of controls for case-control analysis of cohort studies. *Biometrics,* **40,** 63–75

Lubin, J.H., Pottern, L.M., Blot, W.J., Tokudome, S., Stone, B.J. & Fraumeni, J.F., Jr (1981) Respiratory cancer among copper smelter workers: recent mortality statistics. *J. occup. Med.*, **23,** 779–784

Lubin, J.H., Blot, W.J., Berrino, F., Flamant, R., Gillis, C.R., Junze, M., Schmähl, D. & Viseo, G. (1984) Modifying risk of developing lung cancer by changing habits of cigarette smoking. *Br. med. J.*, **288,** 1953–1956

Lundin, F.E., Archer, V.E. & Wagoner, J.K. (1979) *An exposure–time–response model for lung cancer mortality in uranium miners.* In: Breslow, N.E. & Whittemore, A.S., eds., *Energy and Health,* Philadelphia, SIAM, pp. 243–264

MacMahon, B. (1962) Prenatal X-ray exposure and childhood cancer. *J. natl Cancer Inst.*, **28,** 1173–1191

Mancuso, T.F. & El-Attar, A.A. (1967) Mortality pattern in a cohort of asbestos workers. *J. occup. Med.*, **9,** 147–162

Mantel, N. (1973) Synthetic retrospective studies and related topics. *Biometrics,* **29,** 479–486

Mantel, N. & Stark, C.R. (1968) Computation of indirect adjusted rates in the presence of confounding. *Biometrics,* **24,** 997–1005

Mays, C.W. & Spiess, H. (1984) *Bone sarcomas in patients given radium-224.* In: Boice, J.D., Jr & Fraumeni, J.F., Jr, eds, *Radiation Carcinogenesis: Epidemiology and Biological Significance,* New York, Raven Press, pp. 241–252

McMichael, A.J., Jensen, O.M., Parkin, D.M. & Zaridze, D.G. (1984) Dietary and endogenous cholesterol and human cancer. *Epidemiol. Rev.*, **6,** 192–216

Mendelhall, W. & Lehman, E.H., Jr (1960) An approximation to the negative moments of the positive binomial useful in life testing. *Technometrics,* **2,** 227–242

Mendelsohn-Pottern, L., Stone, B.J., Day, N.E. & Fraumeni, J.F. (1980) Thyroid cancer in Connecticut 1935–1975: an analysis by cell type. *Am. J. Epidemiol.*, **112,** 764–774

Miettinen, O.S. (1972) Standardization of risk ratios. *Am. J. Epidemiol.*, **96,** 383–388

Miettinen, O.S. (1976) Estimability and estimation in case-referent studies. *Am. J. Epidemiol.*, **103,** 226–235

Miettinen, O.S. & Wang, J.D. (1981) An alternative to the proportionate mortality ratio. *Am. J. Epidemiol.*, **114,** 144–148

Miller, A.B., Howe, G.R., Sherman, G.J. & Lindsay, J. (1987) The Canadian study of cancer following multiple fluoroscopies. I: Mortality from breast cancer in women, 1950–1980. *J. natl Cancer Inst.* (in press)

Monson, R.R. (1974) Analysis of relative survival and proportional mortality. *Comp. biomed. Res.*, **7,** 325–332

Monson, R.R. (1980) *Occupational Epidemiology,* Boca Raton, Florida, CRC Press

Moolgavkar, S.H. (1978) The multistage theory of carcinogenesis and the age distribution of cancer in man. *J. natl Cancer Inst.*, **61,** 49–52

Moolgavkar, S.H., Day, N.E. & Stevens, R.G. (1980) Two-stage model for carcinogenesis: epidemiology of breast cancer in females. *J. natl Cancer Inst.*, **65,** 559–569

Moolgavkar, S.H., Lustbader, E.D. & Venzon, D.J. (1984) A geometric approach to nonlinear regression diagnostics with application to matched case-control studies. *Ann. Stat.*, **12,** 816–826

Mosteller, F. & Tukey, J.W. (1977) *Data Analysis and Regression: A Second Course in Statistics,* Reading, Mass., Addison & Wesley

MRC Environmental Epidemiology Unit (1984) *Expected Numbers in Cohort Studies (MRC Scientific Report No. 6),* Southampton, Medical Research Council

Najarian, T. (1983) Comment. *Am. Stat.*, **37,** 455–457

Najarian, T. & Colton, T. (1978) Mortality from leukaemia and cancer in shipyard nuclear workers. *Lancet,* **i,** 1018–1020

Nelson, W. (1969) Hazard plotting for incomplete failure data. *J. Qual. Technol.*, **1,** 27–52

Newhouse, M.L. & Berry, G. (1976) Predictions of mortality from mesothelial tumours in asbestos factory workers. *Br. J. ind. Med.*, **33,** 147–151

Oakes, D. (1977) The asymptotic information in censored survival data. *Biometrika,* **64,** 441–448

Oakes, D. (1981) Survival times: aspects of partial likelihood. *Int. stat. Rev.*, **49,** 235–264

Office of Population Censuses and Surveys (1978) *Occupational Mortality: The Registrar General's Decennial Supplement for England and Wales 1970–1972,* London, Her Majesty's Stationery Office

Parkin, D.M., ed. (1986) *Cancer Occurrence in Developing Countries (IARC Scientific Publications No. 75),* Lyon, International Agency for Research on Cancer

Pearson, E.S. & Hartley, H.O. (1966) *Biometrika Tables for Statisticians,* Vol. I (3rd Edition), Cambridge, Cambridge University Press

Persing, J.P. (1981) *Risk Factors for Breast Cancer in Women with BBD: Reproductive Factors and Exogenous Estrogens,* MS Thesis, Seattle, University of Washington

Peterson, A.V., Prentice, R.L. & Marek, P.M. (1983) *Implementation and computational considerations of the Cox partial likelihood analysis.* In: Heiner, K.W., Sacher, R.S. & Wilkinson, J.W., eds, *Computer Science and Statistics: Proceedings of the 14th Symposium on the Interface,* pp. 92–100

Peto, J. (1978) The hygiene standard for chrysotile asbestos. *Lancet,* **i,** 484–489

Peto, J. (1980) *Lung cancer mortality in relation to measured dust levels in an asbestos textile factory.* In: Wagner, J.C., ed., *Biological Effects of Mineral Fibres (IARC Scientific Publications No. 30),* Lyon, International Agency for Research on Cancer, pp. 829–836

Peto, J. (1984) *Early- and late-stage carcinogenesis in mouse skin and in man.* In: Börzsönyi, M., Day, N.E., Lapis, K. & Yamasaki, H., eds, *Models, Mechanisms and Etiology of Tumour Promotion (IARC Scientific Publications No. 56),* Lyon, International Agency for Research on Cancer, pp. 359–371

Peto, J., Henderson, B.E. & Pike, M.C. (1981) *Trends in mesothelioma incidence in the United States and the forecast epidemic due to asbestos exposure during World War II.* In: Peto, R. & Schneiderman, M., eds, *Quantification of Occupational Cancer (Banbury Report 9)*, Cold Spring Harbor, NY, CSH Press, pp. 51–69

Peto, J., Seidman, H. & Selikoff, I.J. (1982) Mesothelioma mortality in asbestos workers: implications for models of carcinogenesis and risk assessment. *Br. J. Cancer,* **45,** 124–135

Peto, J., Cuckle, H., Doll, R., Hermon, C. & Morgan, L.G. (1984) *Respiratory cancer mortality of Welsh nickel refinery workers.* In: Sunderman, F.W., ed., *Nickel in the Human Environment (IARC Scientific Publications No. 53)*, Lyon, International Agency for Research on Cancer, pp. 37–46

Peto, R. (1972) Contribution to discussion of paper by D.R. Cox. *J. R. stat. Soc. B,* **34,** 205–207

Peto, R. (1977) *Epidemiology, multi-stage models, and short term mutagenicity tests.* In: Hiatt, H.H., Watson, J.D. & Winsten, J.A., eds, *Origins of Human Cancer,* Cold Spring Harbor, NY, CSH Press, pp. 1403–1428

Peto, R. & Peto, J. (1972) Asymptotically efficient rank invariant test procedures (with discussion). *J. R. stat. Soc. A,* **135,** 185–206

Peto, R. & Pike, M. (1973) Conservatism of the approximation $\sum (O-E)^2/E$ in the logrank test for survival data or tumour incidence data. *Biometrics,* **29,** 579–584

Pierce, D.A. & Preston, D.L. (1984) *Hazard function modelling for dose-response analysis of cancer incidence in A-bomb survivor data.* In: Prentice, R.L. & Thompson, D.J., eds, *Atomic Bomb Survivor Data: Utilization and Analysis,* Philadelphia, SIAM, pp. 51–66

Pierce, D.A., Preston, D.L. & Ishimaru, T. (1985) *A Method for Analysis of Cancer Incidence in Japanese A-bomb Survivors, with Application to Acute Leukemia, (RERF Technical Report)*, Hiroshima, Radiation Effects Research Foundation

Pike, M.C., Krailo, M.D., Henderson, B.E., Casagrande, J.T. & Hoel, D.G. (1983) 'Hormonal' risk factors, 'breast tissue age' and the age-incidence of breast cancer. *Nature,* **303,** 767–770

Pike, M.C. (1985) Breast cancer and oral contraceptives (letter). *Lancet,* **ii,** 1180–1181

Pocock, S., Cook, D.G. & Beresford, S.A.A. (1981) Regression of area mortality rates on explanatory variables: what weighting is appropriate? *Appl. Stat.,* **30,** 286–295

Pregibon, D. (1979) *Data Analytic Methods for Generalized Linear Models,* Ph.D. Thesis, Toronto, University of Toronto

Pregibon, D. (1980) Goodness of link tests for generalized linear models. *Appl. Stat.,* **29,** 15–24

Pregibon, D. (1981) Logistic regression diagnostics. *Ann. Stat.,* **9,** 705–724

Pregibon, D. (1984) Data analytic methods for matched case-control studies. *Biometrics,* **40,** 639–651

Prentice, R.L. (1986) A case-cohort design for epidemiologic cohort studies and disease prevention trials. *Biometrika,* **73,** 1–12

Prentice, R.L. & Breslow, N.E. (1978) Retrospective studies and failure time models. *Biometrika,* **65,** 153–158

Prentice, R.L. & Mason, W.M. (1986) On the application of linear relative risk regression models. *Biometrics,* **42,** 109–120

Prentice, R.L. & Self, S.G. (1983) Asymptotic distribution theory for Cox-type regression models with general relative risk form. *Ann. Stat.,* **11,** 804–813

Prentice, R.L., Kalbfleisch, J.D., Peterson, A.V., Flournoy, N., Farewell, V.T. & Breslow, N.E. (1978) The analysis of failure times in the presence of competing risks. *Biometrics,* **34,** 541–554

Prentice, R.L., Yoshimoto, Y. & Mason, M.W. (1983) Relationship of cigarette smoking and radiation exposure to cancer mortality in Hiroshoma and Nagasaki. *J. natl Cancer Inst.,* **70,** 611–622

Prentice, R.L., Self, S.G. & Mason, M.W. (1986) *Design options for sampling within a cohort.* In: Moolgavkar, S.H. & Prentice, R.L., eds, *Modern Statistical Methods in Chronic Disease Epidemiology,* New York, Wiley, pp. 50–62

Quenouille, M. (1949) Approximate tests of correlation in time series. *J. R. stat. Soc. B,* **11,** 18–84

Ramlau-Hansen, H. (1983) Smoothing counting process intensities by means of kernel functions. *Ann. Stat.,* **11,** 453–466

Rao, C.R. (1965) *Linear Statistical Inference and its Applications,* New York, Wiley

Rinsky, R.A., Zumwalde, R.O., Waxweiler, R.J., Murray, W.E., Jr, Bierbaum, P.J., Landrigan, P.J., Terpilak, M. & Cox, C. (1981) Cancer mortality at a naval nuclear shipyard. *Lancet,* **i,** 231–235

Robins, J., Gail, M.H. & Lubin, J.H. (1986a) More on biased selection of controls. *Biometrics,* **42,** 293–299

Robins, J., Breslow, N. & Greenland, S. (1986b) A Mantel–Haenszel variance consistent under both large strata and sparse data limiting models. *Biometrics,* **42,** 311–323

Rose, G. & Shipley, M.J. (1980) Plasma lipids and mortality: a source of error. *Lancet,* **i,** 523–526

Rothman, K.J. (1976) Causes. *Am. J. Epidemiol.,* **104,** 587–592

Rothman, K.J. & Boice, J.D., Jr (1979) *Epidemiologic Analysis with a Programmable Calculator* (*NIH Publication 79-1649*), Washington DC, US Government Printing Office

Rowland, R.E. & Lucas, H.F. (1984) *Radium-dial workers.* In: Boice, J.D., Jr & Fraumeni, J.F., Jr, eds, *Radiation Carcinogenesis: Epidemiology and Biological Significance,* New York, Raven Press, pp. 231–240

Schlesselman, J.J. (1982) *Case-control Studies. Design, Conduct, Analysis,* Oxford, Oxford University Press

Schoenfeld, D. (1980) Chi-square goodness-of-fit tests for the proportional hazards regression model. *Biometrika,* **67,** 145–153

Schou, G. & Vaeth, M. (1980) A small sample study of occurrence/exposure rates for rare events. *Scand. actuarial J.,* **4,** 209–225

Segi, M. (1960) *Cancer Mortality for Selected Sites in* 24 *Countries* (*1950–1957*), Sendai, Tohoku University School of Medicine

Seidman, H., Selikoff, I.J. & Hammond, E.C. (1979) Short-term asbestos work exposure and long-term observation. *Ann. N.Y. Acad. Sci.,* **330,** 61–90

Selikoff, I.J., Hammond, E.C. & Seidman, H. (1973) *Cancer risk of insulation workers in the United States.* In: Bogovski, P., Gilson, J.C., Timbrell, V. & Wagner, J.C., eds, *Biological Effects of Asbestos (IARC Scientific Publications No. 8)*, Lyon, International Agency for Research on Cancer, pp. 209–216

Selikoff, I.J., Hammond, E.C. & Seidman, H. (1980) Latency of asbestos disease among insulation workers in the United States and Canada. *Cancer,* **46,** 2736–2740

Shapiro, S., Venet, W., Strax, P., Venet, L. & Roeser, R. (1982) Ten- to fourteen-year effect of screening on breast cancer mortality. *J. natl Cancer Inst.,* **69,** 349–355

Shore, R.E., Hempelmann, L.H., Kowaluk, E., Mansur, P.S., Pasternack, B.S., Albert, R.E. & Haughie, G.E. (1977) Breast neoplasms in women treated with X-rays for acute postpartum mastitis. *J. natl Cancer Inst.,* **59,** 813–822

Siemiatycki, J. & Thomas, D.C. (1981) Biological models and statistical interactions: an example from multi-stage carcinogenesis. *Int. J. Epidemiol.,* **10,** 383–387

Silcock, H. (1959) The comparison of occupational mortality rates. *Pop. Stud.,* **13,** 183–192

Smith, P.G. & Day, N.E. (1981) *Matching and confounding in the design and analysis of epidemiological case-control studies.* In: Bithell, J. & Coppi, R., eds. *Perspectives in Medical Statistics,* London, Academic Press, pp. 39–64

Smith, P.G. & Day, N.E. (1984) The design of case-control studies: the influence of confounding and interaction effects. *Int. J. Epidemiol.,* **13,** 356–365

Smith, P.G. & Doll, R. (1982) Mortality among patients with ankylosing spondylitis after a single treatment course with X rays. *Br. med. J.,* **284,** 449–460

Smith, P.G., Pike, M.C., Hill, A.P., Breslow, N.E. & Day, N.E. (1981) Multivariate conditional logistic analysis of stratum-matched case-control studies. *Appl. Stat.,* **30,** 190–197

Sprott, D.A. (1973) Normal likelihoods and their relation to large sample theory of estimation. *Biometrika,* **60,** 457–465

Stewart, A., Webb, J. & Hewitt, D. (1958) A survey of childhood malignancies. *Br. med. J.,* **ii,** 1495–1509

Stewart, W.H. & Pierce, D.A. (1982) Efficiency of Cox's model in estimating regression parameters with grouped survival data. *Biometrika,* **69,** 539–545

Storer, B.E. & Crowley, J. (1985) A diagnostic for Cox regression and general conditional likelihoods. *J. Am. stat. Assoc.,* **80,** 139–147

Storer, B.E., Wacholder, S. & Breslow, N.E. (1983) Maximum likelihood fitting of general risk models to stratified data. *Appl. Stat.,* **32,** 177–181

Suissa, S. & Shuster, J.J. (1985) Exact unconditional sample sizes for the 2×2 binomial trial. *J. R. stat. Soc. A,* **148,** 317–327

Szmuness, W. (1978) Hepatocellular carcinoma and the hepatitis B virus: evidence for a causal association. *Prog. med. Virol.,* **24,** 40–69

Tanner, M.A. & Wong, W.H. (1984) Data based nonparametric estimation of the hazard function with applications to model diagnostics and exploratory analysis. *J. Am. stat. Assoc.,* **79,** 174–182

Tarone, R.E. (1982) The use of historical control information in testing for a trend in Poisson means. *Biometrics,* **38,** 457–462

Tarone, R.E. (1985) On heterogeneity tests based on efficient scores. *Biometrika,* **72,** 91–95

Tarone, R.E. & Gart, J.J. (1980) On the robustness of combined tests for trends in proportions. *J. Am. stat. Assoc.,* **75,** 110–116

de-Thé, G.B., Geser, A., Day, N.E., Tukei, P.M., Williams, E.H., Beri, D., Smith, P.G., Bornkamm, G.W., Feorino, P. & Henle, W. (1978) Epidemiological evidence for causal relationship between Epstein-Barr virus and Burkitt's lymphoma from Ugandan prospective study. *Nature,* **274,** 756–761

Thomas, D.B., Persing, J.P. & Hutchinson, W.B. (1982) Exogenous estrogens and other risk factors for breast cancer in women with benign breast diseases. *J. natl Cancer Inst.,* **69,** 1017–1025

Thomas, D.C. (1977) Addendum to a paper by Liddell, F.D.K., McDonald, J.C. & Thomas, D.C. *J. R. stat. Soc. A,* **140,** 483–485

Thomas, D.C. (1981) General relative risk functions for survival time and matched case-control analysis. *Biometrics,* **37,** 673–686

Thomas, D.C. (1982) *Temporal effects and interactions in cancer: implications of carcinogenic models.* In: Prentice, R.L. & Whittemore, A.S., eds, *Environmental Epidemiology: Risk Assessment,* Philadelphia, SIAM, pp. 107–121

Thomas, D.C. (1983) Statistical methods for analysing effects of temporal patterns of exposure on cancer risks. *Scand. J. Work Environ. Health,* **9,** 353–366

Thomas, D.C. & McNeill, K.J. (1982) *Risk Estimates for the Health Effects of Alpha Radiation* (*Research Report INFU-0081*), Ottawa, Atomic Energy Control Board

Thompson, R. & Baker, R. (1981) Composite link functions in generalized linear models. *Appl. Stat.,* **30,** 125–131

Thompson, W.D., Kelsey, J.L. & Walter, S.D. (1982) Cost and efficiency in the choice of matched and unmatched case-control designs. *Am. J. Epidemiol.,* **116,** 840–851

Titterington, D.M. (1985) Common structure of smoothing techniques in statistics. *Int. stat. Rev.,* **53,** 141–170

Tomatis, L., Turusov, V., Day, N. & Charles, R.T. (1972) The effect of long-term exposure to DDT on CF-1 mice. *Int. J. Cancer,* **10,** 489–506

Tsiatis, A.A. (1980) A note on a goodness-of-fit test for the logistic regression model. *Biometrika,* **67,** 250–251

Tsiatis, A.A. (1981) A large sample study of Cox's regression model. *Ann. Stat.,* **9,** 93–108

Tzonou, A., Kaldor, J., Day, N.E., Trichopoulos, D. & Smith, P.G. (1986) The effects of misclassification on case-control studies. *Rev. Epidemiol. Santé publ.,* **34,** 10–17

Ury, H. (1975) Efficiency of case-control studies with multiple controls per case: continuous or dichotomous data. *Biometrics,* **34,** 643–649

Ury, H.K. & Fleiss, J.L. (1980) On approximate sample sizes for comparing two independent proportions with the use of Yates' correction. *Biometrics,* **36,** 347–351

US Bureau of Censuses (1972) *Census of Population: 1970, General Population Characteristics* (*Final Report PC(1)-B*), Washington DC, US Government Printing Office

Vaeth, M. (1985) On the use of Wald's test in exponential families. *Int. stat. Rev.*, **53,** 199–214

Vainio, H. (1985) Current trends in the biological monitoring of exposure to carcinogens. *Scand. J. Work Environ. Health,* **11,** 1–6

Wagoner, J.K., Infante, P.F. & Saracci, R. (1976) Vinyl chloride and mortality. *Lancet,* **ii,** 194–195

Wald, N.J. & Doll, R., eds (1985) *Interpretation of Negative Epidemiological Evidence for Carcinogenicity (IARC Scientific Publications No. 65),* Lyon, International Agency for Research on Cancer

Wald, N.J., Idle, M., Boreham, J. & Bailey, A. (1980) Low serum vitamin A and subsequent risk of cancer. Preliminary results of prospective study. *Lancet,* **ii,** 775–777

Walker, A.M. & Rothman, K.J. (1982) Models of varying parametric form in case-referent studies. *Am. J. Epidemiol.,* **115,** 129–137

Wall, W.D. & William, H.L. (1970) *Longitudinal Studies and the Social Sciences,* London, Heinemann

Walter, S.D. (1980) Matched case-control studies with a variable number of controls per case. *Appl. Stat.,* **29,** 172–179

Waterhouse, J., Muir, C., Correa, P. & Powell, J., eds (1976) *Cancer Incidence in Five Continents, Vol. III (IARC Scientific Publications No. 15),* Lyon, International Agency for Research on Cancer

Waxweiler, R.J., Roscoe, R.J., Archer, V.E., Thun, M.J., Wagoner, J.K. & Lundin, F.E. (1981) *Mortality follow-up through 1977 of the white underground uranium mines cohort examined by the US Public Health Service.* In: Gomez, M., ed., *Radiation Hazards in Mining: Control, Measurement, and Medical Aspects,* New York, New York Society of Mining Engineers of the American Institute of Mining, Metallurgical and Petroleum Engineers, Inc., pp.

Waxweiler, R.J., Beaumont, J.J., Henry, J.A., Brown, D.P., Robinson, C.F., Ness, G.O., Wagoner, J.K. & Lemen, R.A. (1983) A modified life table analysis system for cohort studies. *J. occup. Med.,* **25,** 115–124

Welsh, K., Higgins, I., Oh, M. & Burchfiel, C. (1982) Arsenic exposure, smoking, and respiratory cancer in copper smelter workers. *Arch. environ. Health,* **37,** 325–335

Wen, C.P., Tsai, M.S. & Gibson, R.L. (1983) Anatomy of the healthy worker effect: a critical review. *J. occup. Med.,* **25,** 283–289

Whittemore, A.S. (1981) Sample size for logistic regression with small response probabilities. *J. Am. stat. Assoc.* **76,** 27–32

Whittemore, A.S. & Keller, J.B. (1978) Quantitative theories of carcinogenesis. *SIAM Rev.,* **20,** 1–30

Whittemore, A.S. & McMillan, A. (1982) *Analysing occupational cohort data: application to US uranium miners.* In: Prentice, R.L. & Whittemore, A.S., eds, *Environmental Epidemiology: Risk Assessment,* Philadelphia, SIAM, pp. 65–81

Whittemore, A.S. & McMillan, A. (1983) Lung cancer mortality among US uranium miners: a reappraisal. *J. natl Cancer Inst.,* **71,** 489–499

Williams, D.A. (1976) Improved likelihood ratio tests for complete contingency tables. *Biometrika,* **63,** 33–37

Yandell, B.S. (1983) Nonparametric inference for rates with censored survival data. *Ann. Stat.*, **11,** 1119–1135

Yerushalmy, J. (1951) A mortality index for use in place of the age-adjusted death rate. *Am. J. publ. Health,* **41,** 907–922

Yule, G.U. (1934) On some points relating to vital statistics, more especially statistics of occupational mortality. *J. R. stat. Soc.,* **97,** 1–84

Zavon, M.R., Hoegg, U. & Bingham, E. (1973) Benzidine exposure as a cause of bladder tumors. *Arch. environ. Health,* **27,** 1–7

Zelen, M. & Dannemiller, M.C. (1961) The robustness of life testing procedures derived from the exponential distribution. *Technometrics,* **3,** 29–49