

## CURRICULUM VITAE

**Scott Shields Emerson, M.D., Ph.D.**

### 1. Biographical Information

Professor of Biostatistics  
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### 2. Education

University of Virginia, Charlottesville, Virginia, B.A., Physics, 1977  
University of Virginia, Charlottesville, Virginia, M.D., Medicine, 1981  
University of Virginia, Charlottesville, Virginia, M.C.S., Computer Science, 1984  
University of Washington, Seattle, Washington, Ph.D., Biostatistics, 1988

### 3. Licensure: not applicable

### 4. Professional Positions

Postdoctoral Fellow, Department of Biomedical Engineering, University of Virginia, 1981-84  
Senior Fellow, Department of Biostatistics, University of Washington, 1984-88  
Assistant Professor, Division of Biostatistics, Department of Statistics, University of Florida, 1988-89  
Research Assistant Professor, Department of Family and Community Medicine, University of Arizona, 1989-95  
Research Associate, Arizona Cancer Center, University of Arizona, 1989-95  
Associate Professor, Department of Statistics, University of Arizona, 1992-95  
Member, Applied Mathematics, University of Arizona, 1993-95  
Associate Professor, Department of Biostatistics, University of Washington, 1995-1999  
Associate Member, Division of Public Health Sciences, Fred Hutchinson Cancer Research Center, 1995-2000  
Professor, Department of Biostatistics, University of Washington, 1999-present  
Graduate Program Coordinator, Department of Biostatistics University of Washington, 2002-2005

### 5. Honors, Awards, Scholarships

Honor Award Scholarship, University of Virginia (1973-77)  
Echols Scholar, University of Virginia (1973-77)  
Phi Beta Kappa (1977)  
NLM Fellowship, Computer Applications to Medicine (1981-84)  
NCI Fellowship, Cancer Epidemiology and Biostatistics (1984-88)  
Donovan J. Thompson Award, University of Washington (1985)  
WNAR Student Paper Competition, Runner-up (1988)

September 25, 2009

Best Special Contributed Paper, Section on Teaching Statistics in the Health Sciences,  
American Statistical Association, 1997 Joint Statistical Meetings  
Outstanding Teaching Award, School of Public Health, 1999  
Fellow, American Statistical Association, 2008  
Best Contributed Paper, Section on Teaching Statistics in the Health Sciences, American  
Statistical Association, 2008 Joint Statistical Meetings

## 6. Professional Activities (outside of UW)

Organizer and chair of Joint IMS/WNAR Invited Paper Session: Ethical Issues in Clinical Trials,  
IMS/WNAR Western Regional Conference, Santa Barbara, California, July 1991.  
Organizer of ENAR Invited Paper Session: Estimation After Sequential Stopping, ENAR  
Regional Conference, Cincinnati, Ohio, March 1992.  
Organizer and chair of Invited Paper Session: Statistical Methods for the Detection of  
Interactions Between Drugs, 1992 Joint Statistical Meeting, Boston Massachusetts,  
August, 1992.  
Invited participant, National Cancer Institute Workshop on Markers of Colon Cell Proliferation,  
Bethesda, Maryland, October, 1992.  
Organizer and Chair of Invited Paper Session: Biostatistics Service Courses for Health Sciences  
Researchers: Where Should We Be in 2007? 1997 Joint Statistical Meeting, Anaheim,  
California, August 1997.  
Organizer and Chair of Invited Paper Session: Time-Varying Treatment Effects in Clinical Trials,  
2005 Annual Meeting, WNAR, Fairbanks, Alaska, June, 2005.

### *Membership in Professional Organizations:*

American Statistical Association  
Program Chair, Section on Epidemiology, 1995-96  
Biometric Society  
Member, Regional Advisory Board, 1993-95  
WNAR Representative to Program Committee, 1995 Joint Statistical Meetings  
President, WNAR, 1999  
Society of Clinical Trials

### *Editorial Boards:*

Associate Editor, American Journal of Epidemiology (1993-97)  
Statistical Editor, Journal of the National Cancer Institute (1995-2003)  
Member, Editorial Board, Sequential Analysis (1996-present)  
Review of manuscripts submitted for publication to:  
*Journal of the American Statistical Association, Journal of the Royal Statistical Society,  
Series B, Controlled Clinical Trials, Biometrics, American Journal of Epidemiology, The  
American Statistician, Statistics in Medicine, Journal of Statistical Planning and  
Inference, American Journal of Public Health, Communications in Statistics-Theory and  
Methods, Biometrical Journal, Journal of the National Cancer Institute, The Statistician,  
Cancer Research, Lifetime Data Analysis, Clinical Chemistry*

### *Appointments, Advisory Boards and Review Committees:*

- Member, ad hoc NCI Technical Review Group for the Prostate, Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial - Study Coordinating and Data Management Center, June 1991.
- Member, ad hoc NCI Technical Review Groups for the Prostate Lung, Colorectal and Ovarian (PLCO) Cancer Screening Trial - Screening Centers, August, 1991.
- Member, ad hoc NHLBI Special Emphasis Panel for the evaluation of the Data Coordinating Center and Clinical Centers for the Clinical Network for the Treatment of Adult Respiratory Distress Syndrome, April, 1994.
- Member, NCI Site Visit Committee, University of Pennsylvania Cancer Center core Grant Application.
- Member, NHLBI Site Visit Committee, Data Coordinating Center for the Clinical Network for the Treatment of Adult Respiratory Distress Syndrome, April 1994.
- Member, Protocol Review Committee, Adult Respiratory Distress Syndrome Network, NHLBI, 1995-2004.
- Member, ad hoc NIAMS Technical Review Group for Data Integrity Assessments for NIAMS Clinical Trials, May 1996.
- Member, Data Safety Monitoring Committee, Multicenter Clinical Trial of E5 in Gram Negative Sepsis, Pfizer, Inc. and Xoma Corporation.
- Member, Data Safety Monitoring Committee, Multicenter Clinical Trial of rhuMab HER2 in Breast Cancer, Genentech Corporation.
- Member, NCI Special Emphasis Panel for PLCO Expansion, July 1997.
- Member, Data Safety Monitoring Board, Phase II Clinical Trials of rhu Mab CD18, Protodigm.
- Member, ad hoc NCI Review Group for Breast Cancer Screening Trial, January 1998
- Member, ad hoc NCI Review Group for NSABP, April, 1998
- Member, Data Safety Monitoring Committee, Multicenter Clinical Trial of BPI in Trauma Patients, Xoma Corporation
- Member, ad hoc NCI Review Group for PLCO Expansion, June-August, 1998
- Member, Data Safety Monitoring Board, Clinical Trial of Apheresis Column in Rheumatoid Arthritis, Otsuka Corporation
- Member, Data Safety Monitoring Board, Clinical Trials of Histamine in Malignant Melanoma and Acute Myelogenous Leukemia, Maxim Pharmaceuticals
- Member, Data Safety Monitoring Board, LIMIT Trial, Genentech Corporation
- Chair, Data Safety Monitoring Board, Clinical Trial of anti-CD11 in Psoriasis, Genentech
- Member, Data Safety Monitoring Board, Clinical Trial of Efalizumab in Rheumatoid Arthritis, Xoma/Genentech
- Member, Data Safety Monitoring Board, Clinical Trial of Vaccine in Lung Cancer, Biomira
- Member, Data Safety Monitoring Board, DFMO and Sulindac in Colon Polyp Prevention, University of California Irvine (NCI sponsored)
- Chair, Data Safety Monitoring Board, Clinical Trials of Histamine in Malignant Melanoma, Maxim Pharmaceuticals
- Member, Data Safety Monitoring Board, National Lung Screening Trial, National Cancer Institute
- Member, FDA Reproductive Drugs Scientific Advisory Panel 2002 - 2006
- Member, Data Safety Monitoring Board, Clinical Trials of rTFPI in Severe Community Acquired Pneumonia, Chiron
- Member, Internal Data Safety Monitoring Board, Clinical Trial of Aspirin and Biology of the Colon, Fred Hutchinson Cancer Research Center (NIH sponsored)
- Member, Data Safety Monitoring Board, Clinical Trials of Rituximab in Multiple Sclerosis, Genentech

Member, Data Safety Monitoring Board, Clinical Trials of Xolair in Peanut Allergy, Genentech  
Member, Data Safety Monitoring Board, Clinical Trials of Phenoptin in Phenylketonuria,  
Biomarin  
Member, Data Safety Monitoring Board, Clinical Trial in Gastrointestinal Stromal Tumors,  
Agouron  
Member, Data Safety Monitoring Board, Clinical Trial in Metastatic Breast Cancer, Agouron  
Member, Data Safety Monitoring Board, Clinical Trial in Renal Cell Cancer, Agouron  
Member, Data Safety Monitoring Board, Clinical Trial in Cystic Fibrosis, Chiron  
Member, Data Safety Monitoring Board, Clinical Trial in Hepatitis C Infection, Valeant  
Member, Data Safety Monitoring Board, International AIDS clinical trials, NIAID, NIH  
Member, NIH State of the Science Conference Panel on Management of Menopause-Related  
Symptoms, March 21-23, 2005  
Member, Data Safety Monitoring Board, Clinical Trial in Non-Small Cell Lung Cancer, Bayer  
Member, Data Safety Monitoring Board, Clinical Trial in Biliary Tumors, Helsinn  
Member, Data Safety Monitoring Board, Clinical Trial in Treatment of Nausea and Vomiting in  
Chemotherapy, Glaxo Smith-Kline  
Chair, Data Safety Monitoring Board, Clinical Trial of Massage in Lower Back Pain, Group  
Health Cooperative (NIH sponsored)  
Member, Data Safety Monitoring Board, Clinical Trials in Breast Cancer, Pfizer  
Member, Data Safety Monitoring Board, Clinical Trials in Pancreatic Cancer, Pfizer  
Member, Clinical Trials Review Committee, NHLBI, 2007-2011.  
Member, Data Safety Monitoring Board, Clinical Trial in Aspergillosis, Pfizer  
Member, Data Safety Monitoring Board, Clinical Trial in Lung Transplantation, APT  
Member, Data Safety Monitoring Board, Clinical Trial in Chronic Kidney Disease,  
Novartis  
Member, National Academy of Sciences Oversight Committee on Missing Data in  
Clinical Trials

## 7. Bibliography

### a) Refereed research articles

1. Green SJ, Fleming TR, **Emerson SS**: Effects on overviews of early stopping rules for individual trials. *Statistics in Medicine* 6:361-367, 1987.
2. Adamus G, Zam ZS, **Emerson SS**, Hargrave PA: Monoclonal antibody production: A simple method for rescuing desired hybridomas. *In Vitro Cellular and Developmental Biology* 25:1141-1146, 1989.
3. **Emerson SS**, Fleming TR: Symmetric group sequential test designs. *Biometrics* 45:905-923, 1989.
4. **Emerson SS**, Fleming TR: Contribution to the discussion of: "Interim Analyses: the repeated confidence interval approach." by Jennison C, Turnbull BW. *J Royal Stat Soc (B)* 51:305-361, 1989.
5. Lanciani CA, Giesel JT, Anderson JF, **Emerson SS**: Photoperiod-induced changes in metabolic response to temperature in drosophila melanogaster. *Functional Ecology* 4:126-133, 1990.

6. Virapongse C, **Emerson S**, Li KCP, Martineau BS, Staab EV: Research resources in radiology. *Radiology* 175:247-251, 1990.
7. Dinerman J, Mehta JL, Saldeen TGP, **Emerson S**, Wallin R, Davda R, Davidson A: Increased neutrophil elastase activity in unstable angina pectoris and acute myocardial infarction. *J Am Coll Cardiol* 15:1559-1563, 1990.
8. **Emerson SS**, Fleming TR: Parameter estimation following group sequential hypothesis testing. *Biometrika* 77:875-892, 1990.
9. **Emerson SS**, Fleming TR: Interim analyses in clinical trials. *Oncology* 4:41-51, 1990.
10. Guy J, Ellis EA, Hope GM, **Emerson S**: Maintenance of myelinated fibre G ratio in acute experimental allergic encephalomyelitis. *Brain* 114:281-294, 1991.
11. Lehnert M, Dalton W, Roe D, **Emerson S**, Salmon S: Synergistic inhibition by verapamil and quinine of P-glycoprotein-mediated multidrug resistance in a human myeloma cell line model. *Blood* 77:348-354, 1991.
12. Graham-Pole J, Gee A, **Emerson S**, Gallo J, Lee C, Luzins J, Janssen WE, Pick T, Worthington-White D, Elfenbein G, Gross S, Weiner R: Myeloablative chemoradiotherapy and autologous bone marrow infusions for treatment of neuroblastoma: Factors influencing engraftment. *Blood* 78:1607-1614, 1991.
13. Vargas PA, Alberts DS, Ritenbaugh C, Atwood JR, Sampliner R, Earnest D, Ramanuhan P, McGee D, Clark L, **Emerson S**: Dietary fiber and colon cancer prevention. *Cancer Bulletin* 43:549-554, 1991.
14. Lehnert M, **Emerson S**, Dalton WS, Salmon SE: Identification of potentially useful chemosensitizers to reverse multidrug resistance. *Eur J Cancer* 27 (suppl 2):S210, 1991.
15. Otto PM, Otto RA, Virapongse C, Friedman SM, **Emerson S**, Li KC, Malot R, Kaude JV, Staab EV: Screening test for detection of metallic foreign objects in the orbit before magnetic resonance imaging. *Invest Radiol* 27:308-311, 1992.
16. McGuire TR, Yee GC, **Emerson S**, Gmur DJ, Carlin J: Pharmacodynamic studies of cyclosporine in marrow transplant recipients. A comparison of three assay methods. *Transplantation* 53:1272-1275, 1992.
17. Miller JI, Ahmann FR, **Emerson SS**, Botacini MR: The clinical usefulness of serum PSA following hormonal therapy of metastatic prostate cancer. *J Urol* 147:956-961, 1992.
18. Xu MJ, Plezia P, Alberts DS, **Emerson S**, Peng YM, Sayers S, Liu Y, Ritenbaugh C, Gensler H: Effect of chronic oral administration of beta-carotene on plasma alpha-tocopherol concentrations in an experimental mouse model and normal human subjects and UV irradiated mice. *J Nat Cancer Instit* 84:1559-1565, 1992.
19. **Emerson SS**, Emerson JC: Direct standardization of incidence rates in the presence of incomplete data. *Stat Med* 12:3-12, 1993.

20. **Emerson SS**, McGee DL, Fennerty B, Hixson L, Garewal H, Alberts D: Design and analysis of studies to reduce the incidence of colon polyps. *Stat Med* 12:339-351, 1993.
21. **Emerson SS**: Computation of the uniform minimum variance unbiased estimator of a normal mean following a group sequential test. *Comput Biomed Res* 26:69-73, 1993.
22. Weyman C, Graham-Pole J, **Emerson S**, August CS, Champlin RE, Coccia P, Fay J, Jarris RE, Koch P, Johnson FL, Pick T, Souillet G, Spruce W, Vega R, Willoughby MLN, Woods W: Use of cytosine arabinoside and total body irradiation as conditioning for allogeneic marrow transplantation in patients with acute lymphoblastic leukemia: A retrospective survey. *Bone Marrow Transplantation* 11:43-50, 1993.
23. Lahood N, **Emerson SS**, Kumar P, Sorenson RU: Antibody levels and response to pneumococcal vaccine in steroid dependent asthmatics. *Ann Allergy* 70:289-294, 1993.
24. Lehnert M, **Emerson S**, Dalton WS, de Giuli R, Salmon SE: In vitro evaluation of chemosensitizers for clinical reversal of P-glycoprotein-associated taxol resistance. *Journal of the National Cancer Institute Monographs* 15:63-67, 1993.
25. Fennerty MB, Davidson J, **Emerson SS**, Sampliner RE, Hixson LJ, Garewal HS: Are endoscopic measurements of colonic polyps reliable? *Am J Gastroenterology* 88:496-500, 1993.
26. Hixson LJ, **Emerson SS**, Shassetz LR, Gerner EW: Sources of variability in estimating ornithine decarboxylase activity and polyamine contents in human colorectal mucosa. *Cancer Epidemiology, Biomarkers & Prevention* 3:317-323, 1994.
27. Gerner EW, Garewal HS, **Emerson SS**, Sampliner RE, Gastrointestinal tissue polyamine contents of patients with Barrett's esophagus treated with  $\alpha$ -difluoromethylornithine. *Cancer Epidemiology, Biomarkers & Prevention* 3:325-330, 1994.
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29. Hixson LJ, Einspahr J, Brendel K, Pamukcu R, Burt R, Paranka N, Baier M, **Emerson S**, Alberts D: Antiproliferative effect of nonsteroidal anti-inflammatory drugs against ht-29 colon cancer cells. *Cancer Epidemiology, Biomarkers & Prevention* 3:433-438, 1994.
30. **Emerson SS**, Banks PLC: Interpretation of a leukemia clinical trial stopped early because of an observed beneficial treatment effect. **In:** *Case Studies in Biometry* (N. Lange, *et al.*, eds.). New York: Wiley, 1994, pp. 275-299, 1994.
31. **Emerson SS**: Stopping a clinical trial very early based on unplanned interim analyses: A group sequential approach. *Biometrics* 51:1152-1162, 1995.
32. Thompson FH, Emerson J, Olson S, Weinstein R, Leavitt SA, Leong SPL, **Emerson S**, Trent JM, Nelson MA, Salmon SE, Taetle R: Cytogenetics in 158 patients with regional or disseminated melanoma: Subset analysis of near diploid and simple karyotypes. *Cancer Genet Cytogenet* 83:93-104, 1995.

33. Lehnert M, DeGiuli R, Kunke K, **Emerson S**, Dalton WS, Salmon SE: Serum can inhibit reversal of multidrug resistance by chemosensitizers. *Eur J Cancer* 32:862-867, 1996.
34. **Emerson SS**: Statistical packages for group sequential methods. *Am Statistician* 50:183-192, 1996.
35. **Emerson SS**, Kittelson JM: A computationally simpler algorithm for an unbiased estimate of a normal mean following a group sequential test. *Biometrics* 53:365-369, 1997.
36. Alberts DS, Einspahr J, Ritenbaugh C, Aickin M, Rees-McGee S, Atwood J, **Emerson S**, Mason-Liddil N, Bettinger L, Patel J, Bellapravalu S, Ramanujam PS, Phelps J, Clark: The effect of wheat bran fiber and calcium supplementation on rectal mucosal proliferation rates in patients with resected adenomatous colorectal polyps. *Cancer Epidemiology, Biomarkers & Prevention* 6:161-169, 1997.
37. Einspahr JG, Alberts DS, Gapstur SM, Bostick RM, **Emerson SS**, Gerner EW: Surrogate endpoint biomarkers as measures of colon cancer risk and their use in cancer chemoprevention trials. *Cancer Epidemiology, Biomarkers & Prevention* 6:37-48, 1997.
38. Carithers RL, **Emerson SS**: Therapy of hepatitis C: Meta-analysis of interferon alfa-2b trials. *Hepatology* 26:83S-88S, 1997.
39. Stehman-Breen CO, Psaty BM, **Emerson S**, Gretch D, Bronner M, Marsh C, Davis CL: Association of hepatitis C virus infection with mortality and graft survival in kidney-pancreas transplant recipients. *Transplantation* 64(2):281-286, 1997.
40. Shuhart MC, Bronner MP, Gretch DR, Thomassen LV, Wartelle CF, Tateyama H, **Emerson SS**, Perkins JD, Carithers RL: Histologic and clinical outcome after liver transplantation for hepatitis C. *Hepatology* 26:1646-1652, 1997.
41. Shuhart MC, Kowdley KV, Rohrmann CA, McDonald MF, Wadland DW, McVicar JP, **Emerson SS**, Carithers RL, Kimmey MB: Predictors of bile leak following T-tube removal in orthotopic liver transplant recipients. *Liver Transplantation and Surgery* 4:62-70, 1998.
42. Meyskens FL, Gerner FW, **Emerson S**, Pelot D, Durbin T, Doyle K, Lagerberg W: A randomized double-blind placebo-controlled phase IIb trial of difluoromethylornithine for colon cancer prevention. *J Nat Cancer Inst* 90:1212-1218, 1998.
43. Saint S, Elmore J, Sullivan S, **Emerson S**, Koepsell T: Preventing urinary tract infection using silver-coated urinary catheters: A meta-analysis. *Am J Med* 105:236-241, 1998.
44. Stehman-Breen CO, **Emerson S**, Gretch D, Johnson RJ: Risk of death among chronic dialysis patients infected with Hepatitis C. *Am Jnl of Kidney Dis* 32:629-634, 1998.
45. Kittelson JM, **Emerson SS**: A unifying family of group sequential tests designs. *Biometrics* 55:874-882; 1999.
46. Christakis D, Wright JA, Koepsell TD, **Emerson S**, Connell FA: Is greater continuity of care associated with less emergency room utilization? *Pediatrics* 103:738-742, 1999.

47. Palmer CM, **Emerson S**, Volgoropolous D, Alves D: Dose response relationship of intrathecal morphine for post-caesarean analgesia. *Anesthesiology* 90:437-444, 1999.
48. Kausz A, Antonsen J, Hercz G, Pei Y, Weiss NS, **Emerson S**, Sherrard D: Screening plasma aluminum levels in relation to aluminum bone disease among asymptomatic dialysis patients. *Am J Kidney Dis* 34:688-693; 1999.
49. Blackmore CC, **Emerson SS**, Mann FA, Koepsell TD: Cervical spine imaging in patients with trauma: Determination of fracture risk to optimize use. *Radiology* 211:759-765, 1999.
50. Wong CS, Gipson DS, Gillen DL, **Emerson S**, Koepsell T, Sherrard DJ, Watkins SL, Stehman-Breen: Anthropometric measures and risk of death in children with end-stage renal disease. *Am J Kidney Dis* 36(4):811-19, Oct 2000.
51. Emerson JF, **Emerson SS**: The impact of requisition design on laboratory utilization. *Am J Clin Pathol.* 116(6):879-84, Dec 2001.
52. Miller ME, Morgan TM, Espeland MA, **Emerson SS**: Group comparisons involving missing data in clinical trials; a comparison of estimates and power (size) for some simple approaches. *Stat Med.* 20:(16):2383-97, 2001.
53. Lumley T, Diehr P, **Emerson S**, Chen L: The importance of the normality assumption in large public health data sets. *Annu Rev Public Health* 23:151-69, 2002.
54. Hollingworth W, Deyo RA, Sullivan SD, **Emerson SS**, Gray DT, Jarvik JG: The practicality and validity of directly elicited and SF-36 derived health state preferences in patients with low back pain. *Health Econ.* 11(1):71-85, Jan 2002.
55. Ball AM, Gillen DL, Sherrard D, Weiss NS, **Emerson SS**, Seliger SL, Kestenbaum BR, Stehman-Breen C. Risk of hip fracture among dialysis and renal transplant recipients. *JAMA.* 2002 Dec 18;288(23):3014-8.
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57. Adams KF, Newton KM, Chen C, **Emerson SS**, Potter JD, White E, Lampe JW. Soy isoflavones do not modulate circulating insulin-like growth factor concentrations in an older population in an intervention trial. *J Nutr.* 2003 May;133(5):1316-9.
58. McKone EF, **Emerson SS**, Edwards KL, Aitken ML. Effect of genotype on phenotype and mortality in cystic fibrosis: a retrospective cohort study. *Lancet.* 2003 May 17, 361(9370).
59. Emerson JF, Ngo G, **Emerson SS**. Screening for Interference in Immunoassays. *Clinical Chemistry.* 49:1163-1169. 2003
60. Jarvik JG, Hollingworth W, Martin B, **Emerson SS**, Gray DT, Overman S, Robinson D, Staiger T, Wessbecher F, Sullivan SD, Kreuter W, Deyo RA. Rapid magnetic resonance imaging vs radiographs for patients with low back pain: a randomized controlled trial. *JAMA* 2003; 289: 2810-1818.

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62. Emerson JF, Samoszuk M, Whited CL, **Emerson SS**. Retrospective review of a reflex testing algorithm for anemia etiology. *LabMedica International* 21, 2004.
63. Tworoger SS, Davis S, **Emerson SS**, Mirick DK, Lentz MJ, McTiernan A. Effect of a nighttime magnetic field exposure on sleep patterns in young women. *Am J Epidemiol.* 2004 Aug 1;160(3):224-9.
64. Nason M, **Emerson S**, LeBlanc M. CARTscans: A tool for visualizing complex models. *J Comp. Graph. Stat.* 13, 807-825, 2004.
65. Gillen DL, **Emerson SS**. Information growth in a family of weighted logrank statistics under repeated analyses. *Sequential Analysis.* 24, 1-22, 2005.
66. Gillen DL, **Emerson SS**. A note on P-values under group sequential testing and nonproportional hazards. *Biometrics* 61, 546-551, 2005.
67. Kittelson JM, Sharples KJ, **Emerson SS**. Group sequential clinical trials for longitudinal data with analyses using summary statistics. *Statistics in Medicine* 24, 2005.
68. Adams KF, Lampe PD, Newton KM, Ylvisaker JT, Feld A, Myerson D, **Emerson SS**, White M, Potter JD, Lampe JW. Soy protein containing isoflavones does not decrease colorectal epithelial cell proliferation in a randomized controlled trial. *American Journal of Clinical Nutrition* 82:620-626, 2005.
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70. Emerson JF, **Emerson SS**. Evaluation of a standardized procedure for microscopic cell counts in body fluids. *Journal of Clinical Laboratory Analysis*, 19, 267-275, 2005.
71. NIH State-of-the-Science Panel. National Institutes of Health State-of-the-Science Conference Statement: Management of menopause-related symptoms. *Annals of Internal Medicine*, 142, 2005.
72. Shuhart MC, Sullivan DG, Bekele K, Harrington RD, Kitahata MM, Mathisen TL, Thomassen LV, **Emerson SS**, Gretch DR. Human immunodeficiency virus and antiretroviral therapy: Effect on hepatitis C virus quasispecies variability. *Journal of Infectious Diseases*, 193:1211-1218, 2006.
73. Morishima C, Paschal DM, Wang C, Yoshihara CS, Wood BL, Yeo AET, **Emerson SS**, Shuhart MC, Gretch DR. Decreased NK cell frequency in chronic hepatitis C does not affect ex vivo cytolytic killing. *Hepatology*, 43: 573-580, 2006.

74. Pal S, Shuhart MC, Thomassen L, **Emerson SS**, Su T, Feuerborn N, Kae J, Gretch DR. Intrahepatic hepatitis C virus replication correlates with chronic hepatitis C disease severity in vivo. *J. Virology* 80: 2280-2290, 2006.
75. **Emerson SS**. Issues in the use of adaptive clinical trial designs. *Statistics in Medicine* 25: 3270-3296, 2006.
76. Gillen DL, **Emerson SS**. Non-transitivity in a class of weighted logrank statistics under non-proportional hazards. *Statistics and Probability Letters* 77: 123-130, 2007.
77. **Emerson SS**, Kittelson JM, Gillen DL. Bayesian evaluation of group sequential clinical trial designs. *Statistics in Medicine* 26: 1431-1449, 2007.
78. Morishima C, Shuhart MC, Yoshihara CS, Paschal DM, Silva MA, Thomassen LV, **Emerson SS**, Gretch DR. Preservation of intrahepatic HCV-specific CD4+ T cell responses despite loss of CD4+ T cells in the livers of HCV/HIV coinfecting subjects. *The Journal of Infectious Diseases* 196(4): 577-86, 2007.
79. **Emerson SS**, Kittelson JM, Gillen DL. Frequentist evaluation of group sequential clinical trial designs. *Statistics in Medicine*, 26(28): 5047-80, 2007.
80. Tang L, **Emerson SS**, Zhou XH. Nonparametric and semiparametric group sequential methods for comparing accuracy of diagnostic tests. *Biometrics*. 64, 1137–1145 2008 (Epub 2008 Mar 27).
81. Rudser KD, **Emerson SS**. Implementing type I & type II error spending for two-sided group sequential designs. *Contemporary Clinical Trials*, 2008 29(3):351-8. Epub 2007 Sep 21
82. Aufderheide TP, Kudenchuk PJ, Hedges JR, Nichol G, Kerber RE, Dorian P, Davis DP, Idris AH, Callaway CW, **Emerson S**, Stiell IG, Terndrup TE; The ROC Investigators. Resuscitation Outcomes Consortium (ROC) PRIMED cardiac arrest trial methods Part 1: Rationale and methodology for the impedance threshold device (ITD) protocol. *Resuscitation*. 2008 Aug;78(2):179-185. Epub 2008 May 19.

### In Press

83. Newgard CD, Rudser K, Hedges JR, Kerby JD, Stiell IG, Davis DP, Morrison LJ, Bulger E, Terndrup T Minei JP, Bardarson, **Emerson SS**. Bulger, MD; Tom Terndrup, MD; Joseph P Minei, MD; Berit Bardarson, RN; Scott Emerson, MD, PhD Rudser KD, **Emerson SS**. A critical assessment of the out-of-hospital triage guidelines for physiologic abnormality. (*Journal of Trauma*, in press)
84. Newgard CD, Rudser K, Atkins D, Berg R, Osmod M, Bulger E, Davis D, Schreiber M, Warden C, Rea T, **Emerson SS**. Information to identify high-risk injured children in a multisite, population-based cohort. (*Prehospital Emergency Care*, in press)

### Submitted

85. Rudser KD, LeBlanc ML, **Emerson SS**. Estimation for arbitrary functionals of survival. (Under revision for resubmission to *Statistics in Medicine*)

86. Emerson SC, Rudser KD, **Emerson SS**. Exploring the benefits of adaptive sequential designs in time-to-event endpoint settings. (Under revision for resubmission to *Statistics in Medicine*)
87. Everson-Steward SP, **Emerson SS**. Bio-creep in non-inferiority clinical trials. (submitted to *Statistics in Medicine*)
88. Devlin SM, Thomas E, **Emerson SS**. Parametric and semi-parametric ROC regression under model misspecification. (submitted to *Biostatistics*)
89. Shoben A, **Emerson SS**. Estimates of information growth in longitudinal clinical trials. (submitted to *Biometrics*)
90. **Emerson SS**, Kittelson JM, Gillen DL. On the use of stochastic curtailment in group sequential clinical trials. (Under revision for resubmission to *Statistics in Medicine*).
91. Koprowicz K, **Emerson SS**, Hoff P. A comparison of parametric and coarsened Bayesian interval estimation in the presence of a known mean-variance relationship. (Under revision for resubmission to *Canadian Journal of Statistics*).

#### b) Other refereed scholarly publications

None

#### c) Books and book chapters

1. Emerson SS, Hesterberg T, Bruce AG, Kannapel L. *S+SeqTrial: An S+ Module for Clinical Trial Design*. Release 2, Insightful Corporation, 2002.
2. Alberts DS, Einspahr MS, McGee DL, Hixson LJ, Davidson J, **Emerson S**, Earnest DL: Reproducibility of [ $^3H$ ] - thymidine labeling index determinations in rectal mucosa crypt organ culture. **In:** Calcium, Vitamin D, and Prevention of colon Cancer (M Lipkin, HL Newmar and G Kelloff, eds.). Boca Raton: CRC, 1991, pp. 327-337.
3. Meyskens FL, Pelot D, Meshkinpour H, Plezia P, Gerner EW, **Emerson S**: Preliminary results of phase IIa trial of difluoromethylornithine (DFMO) to prevent colon cancer. **In:** Cancer Chemoprevention (Wattenberg, *et al.*, eds.). Boca Raton: CRC Press, 1992.
4. Lehnert M, **Emerson S**, Dalton WS, Salmon SE: Reversal of MDR1: How to evaluate clinical usefulness of chemsensitizers in vitro. **In:** The Clinical Value of Drug Resistance Assays in Leukemia and Lymphoma (eds.). Reading: Harwood, pp. 183-188.

#### d) Other non-refereed published scholarly publications

##### Contributed Abstracts and Presentations (not otherwise published):

1. Li KC, Elrahman MMA, Kaude JV, Ros PR, Hardt NS, Drylie D, **Emerson SS**: Prostatic carcinoma: sonographic-clinical correlation. Annual Meeting, Association of University of Radiologists, 1989.

2. Kittelson JM, Barrett PJ, **Emerson SS**: Methods for comparing habitat preference curves. Western North American Region of the Biometric Society, 1990.
3. Ellis EA, Guy J, **Emerson S**, Hope GM: Morphometric analysis of remyelination in experimental optic neuritis. ARVO, 1990.

## 8. Patents and Other Intellectual Property

S+SeqTrial: An S-Plus module for the design, monitoring, and analysis of group sequential clinical trials. (C code core copyright Scott S. Emerson; S-Plus interface copyright Insightful, Inc.)

## 9. Funding History

10/1/2005 – 4/30/2009: Resuscitation Outcomes Consortium (NHLBI U01 HL077893: Emerson, PI from 7/1/2006). Funds 70% S. Emerson salary to provide overall direction and statistical support to the data and statistical coordinating center for a network of centers conducting research on pre-hospital resuscitation strategies.

9/1/2005 – 6/30/2008: (NIH EB005829-01: Zhou, PI). Funds 10% S. Emerson salary to collaborate on research into statistical methods for sequential studies of diagnostic markers and nonparametric ROC curves.

4/1/2004 – 12/31/2005: Functional Genomics & HCV Associated Liver Disease (NIDA P30 DA015625: Katze, PI) Funds 20% S. Emerson salary to provide statistical support for research into molecular mechanisms in chronic HCV infection.

9/1/03 – 1/31/05: Ursodiol-Methotrexate for PBC (NIDDK DK92-15: Combes, PI), Data and Statistical Coordinating Center (Subcontract: Emerson, PI). Funded 15% S. Emerson salary to provide statistical support for multicenter Phase III clinical trial.

6/1/2003 – 5/31/2005: HCV Replication and Immune Response in HIV Coinfection (NIAID 5R01 AI49168: Gretch, PI) Funds 10% S. Emerson salary to provide statistical support.

9/30/01 – 8/31/04: Group Sequential Methods for Longitudinal Data (NHLBI R01 HL69719: Emerson, PI; \$100,000 annual budget) Methodologic research into group sequential methods for longitudinal and survival data.

1/1/98 – 12/31/99: Next Generation Software for Group Sequential Analysis (NIH 1R43 CA69992: Bruce, PI) Phase II SBIR funded 40% S. Emerson salary for research and development of software related to the design, monitoring, and analysis of group sequential clinical trials.

9/1/97 – 8/31/03: Ursodiol-Methotrexate for PBC (NIDDK DK92-15: Combes, PI), Data and Statistical Coordinating Center (Subcontract: Carithers, PI). Funded 15% S. Emerson salary to

provide statistical support for multicenter Phase III clinical trial.

5/1/97 – 10/1/98: Cardiovascular Health Study Coordinating Center (NHLBI: Kronmal, PI)  
Funded S. Emerson salary for statistical support for large multicenter observational study.

1/1/96 – 6/30/96: Next Generation Software for Group Sequential Analysis (NIH 1R43  
CA69992: Bruce, PI) Phase I SBIR funded 25% S. Emerson salary for research and development  
of software related to the design, monitoring, and analysis of group sequential clinical trials.

6/1/95 – 12/31/96: Statistical Methods for Medical Studies (NIH P01 CA53996: Prentice, PI)  
Funded 5% S. Emerson salary for methodological research into group sequential trials.

6/1/95 – 5/1/97: Women's Health Initiative Clinical Coordinating Center (NIH N01 WH-2-2110:  
Prentice, PI) Funded 50% S. Emerson salary for statistical support for large Phase III prevention  
trial.

1/1/95 – 12/31/96: Teratogenic Effects on Fetal Rats of Extremely Low Frequency Magnetic  
Fields (Auckland Medical Research Council grant: G. Dawson, PI). Funded 5% S. Emerson  
effort as statistical consultant.

5/1/93 - 4/30/97: Depletion and Chemoprevention of Colon Cancer (NCI R01CA59024:  
Meyskens, PI). Subcontract for data management and statistical analysis (Emerson, PI; \$12,000  
annual budget).

1/1/91 – 12/31/95: Group Sequential Methods in Clinical Trials (NCI R29CA53449: Emerson,  
PI; \$78,000 annual budget). Methodologic research into statistical techniques useful in group  
sequential clinical trials.

7/1/90 - 4/30/92: Colon Cancer Prevention Program Project (NCI CA41108: Alberts, PI),  
Biometry Core (McGee, Project Director; \$205,317 annual budget). Funded 15% S. Emerson  
salary to work on Phase I-III clinical trials of colon cancer preventive agents.

12/15/89 - 12/31/91: Center Core Support Grant (NCI CA23074: Salmon, PI), Cancer  
Prevention and Control Shared Resource (Emerson, Project Director; \$37,576 annual budget).  
Statistical consulting re cancer prevention and control.

## 10. Public Health Practice Activities

None

## 11. Conferences and Symposiums

### Invited Presentations at Professional Meetings:

1. **Emerson SS**, Banks P: Estimation of secondary outcomes following a group sequential trial.  
Invited paper, ENAR Conference, Cincinnati, Ohio, March 1992.

2. **Emerson SS**: Issues in monitoring factorial designs. Invited paper, Joint Statistical Meeting, Boston Massachusetts, August 1992.
3. Gerner E, Hixson L, **Emerson S**, Shassetz R: Factors affecting the measurement of ODC activity and polyamine contents in colorectal tissues. Invited paper, Meeting of the American Society of Preventive Oncology, Tucson, Arizona, March 1993.
4. **Emerson SS**, Banks PLC: The application of group sequential estimation techniques to the results of unplanned interim analyses. Invited paper, Conference on the Interface of Computing and Statistics, San Diego, California, April 1993.
5. **Emerson SS**: Stopping a clinical trial early because of toxicity: A case study examined from different points of view. Invited panelist, Joint Statistical Meetings, San Francisco, California, August 1993.
6. **Emerson SS**: Selection of a group sequential design for monitoring clinical trials. Invited paper, Annual Meeting of the Drug Information Association, Washington, D.C., June 1994.
7. **Emerson SS**, Ritchie JM: Analyzing colon labeling data with a nonlinear random effects model. Invited paper, Joint Statistical Meetings, Toronto, Ontario, August 1994.
8. Freedman LS, **Emerson SS**: Design considerations for polyp prevention trials - with applications to the NCI Polyp Trial. Invited paper, Joint Statistical Meetings, Toronto, Ontario, August 1994.
9. **Emerson SS**, Durazo-Arvizu R: Estimation of Survivor Functions Following Group Sequential Testing. Invited paper, Meeting of the Statistical Society of Canada, Montreal, Canada, 1995.
10. **Emerson SS**: Using sensitivity analyses for early stopping of clinical trials based on secondary outcomes. Invited paper, Schering-Plough Workshop on Clinical Trials, Boston, Massachusetts, May 1996.
11. **Emerson SS**: DSMB membership and nonfinancial conflicts of interest. Invited paper, ENAR Annual Meeting, Pittsburgh, Pennsylvania, 1998.
12. **Emerson SS**, Kittelson JM, Gillen DL. On the use of stochastic curtailment in group sequential clinical trial design. 15<sup>th</sup> Annual Merck-Temple Conference.
13. Emerson SC, Rudser KD, **Emerson SS**. Exploring the benefits of adaptive sequential designs in time-to-event endpoint settings. (International Statistical Institute Meeting, Durban, South Africa, 2009)

#### **Invited Seminars:**

14. Design and interpretation of group sequential trials, University of Florida, Department of Statistics, January 1988.
15. Design and interpretation of group sequential trials, Ohio State University, Department of Statistics, February 1988.

16. Design and interpretation of group sequential trials, University of Wisconsin, Department of Statistics, February 1988.
17. Design and interpretation of group sequential trials, University of North Carolina, Department of Biostatistics, February 1988.
18. Parameter estimation following group sequential hypothesis tests, Harvard University, Department of Biostatistics, February 1989.
19. Parameter estimation following group sequential hypothesis tests, Mayo Clinic, Biostatistics Section, April 1989.
20. Parameter estimation following group sequential hypothesis tests, University of Arizona, Arizona Cancer Center, June 1989.
21. Interim analyses in clinical trials, University of Miami, Department of Epidemiology and Public Health, July 1989.
22. Interpreting results of group sequential trials, University of Michigan, Department of Biostatistics, October 1990.
23. Design and analysis of studies to reduce the incidence of colon polyps, Biometry Branch, Division of Cancer Prevention and Control, National Cancer Institute, February 1992.
24. Stopping a clinical trial very early due to unexpected toxicities, Bowman Gray School of Medicine, Department of Public Health Sciences, June 1994.
25. Analyzing colon crypt labeling data with a nonlinear random effects model, Clinical Division, Fred Hutchinson Cancer Research Center, Clinical Division, September 1994.
26. Stopping a clinical trial very early due to unexpected toxicities, University of Washington, Department of Biostatistics, September 1994.
27. A unified family of group sequential designs, University of Texas El Paso, Biostatistics Laboratory, February 1997.
28. Issues in nonparametric Bayesian analysis of clinical trials, University of Colorado Health Sciences, April, 2002.
29. Issues in nonparametric Bayesian analysis of clinical trials, University of Arizona, Mathematics, February, 2003.
30. Issues in nonparametric Bayesian analysis of clinical trials, Stanford University, Biostatistics, February, 2003.
31. Issues in nonparametric Bayesian analysis of clinical trials, NIAID, December, 2003.
32. Issues in nonparametric Bayesian analysis of clinical trials, Oregon State University, February, 2004.
33. Issues in nonparametric Bayesian analysis of clinical trials, Oregon State University, February, 2004.

34. On the use of stochastic curtailment in group sequential designs. University of Texas Southwestern, December, 2006.
35. Adaptive Clinical Trial Design. MMRI Klimt Lecture, Johns Hopkins University, March 2007.

## 12. University Service

### University Service

#### University of Arizona

Chair, Department of Statistics Consulting Committee, 1991-94  
Member, Department of Statistics Computing Committee, 1991-95  
Graduate Program Advisor, Department of Statistics, 1992-94  
Member, Department of Statistics Academic Program Review Committee, 1991  
Member, University Committee for the Re-organization of Statistics, 1995

#### University of Florida

Member, Biostatistics Curriculum Committee, 1988-89  
Member, Search Committee for Division of Biostatistics faculty, 1989  
Member, Clinical Research Center Advisory Committee, 1988-89  
Member, Search Committee for Director of Biostatistics, 1989

#### University of Washington

Teacher/Mentor, Robert Wood Johnson Clinical Scholars Program  
Member, Biostatistics Curriculum and Teaching Evaluation Committee (EPTEC), 1995-2008  
Chair, First Year Theory Exam Committee, 1996,  
Computer Policy Committee, 1995-2002  
Chair, Computer Policy Committee, 1997-2002  
Member, Second Year Applied Exam Committee, 1997, 1998, 1999  
Chair, Core Curriculum Committee, 1999-2002  
Member, Second Year Theory Exam Committee, 2002, 2004  
Graduate Program Coordinator, 2002-2005

## 13. Professionally-Related Community Service

Volunteer teacher of math, science and probability for 1 hour per week to 2nd through 5th graders in Tucson Unified School District, 1990-1995.  
Consultant to Pima County Public Defenders Office in case regarding potential ethnic discrimination in jury selection process, 1994-95.  
Lectures on clinical trials to 8th grade math classes at Eckstein Middle School, 1997.  
Volunteer teacher of AP Statistics, Roosevelt High School, Seattle School District, 2001-2002.

## 14. [Other Pertinent Information As Needed]

### Research Interests

Clinical trials, sequential testing, survival analysis, categorical data, nonparametric Bayesian statistics, classification and regression trees, statistical consulting, computer intensive methods.

## 15. Teaching History

### a) Formal Courses

#### University of Virginia

Math 112: Introduction to Statistics: Evening class in introductory statistics for post-baccalaureate students. (3 sem hr)  
Taught: Spr 1984 (15 students).

#### University of Florida

Stat 677: Advanced Biostatistics: Second semester of year long sequence in biostatistics for statistics graduate students (3 sem hr)  
Taught: Sum, 1989 (8 students).

#### University of Arizona

Stat 565: Statistics for Medical Sciences: First semester introductory statistics for nonmajor graduate students. (3 sem hr).  
Taught: Fall 1990 (35 students), Spr 1992 (42 students).

Stat 275: Statistics Methods for Management: Introductory statistics for undergraduate pre-business majors. (3 sem hr).  
Taught: Spr 1991 (250 students).

Stat 566: Theory of Statistics: Two semester sequence in mathematical statistics for senior undergraduate math majors (first semester only) and statistics graduate students. (3-3 sem hr).  
Taught: Fall 1992 (25 ugrad students; 12 grad students); Spr 1993 (12 grad students); Fall 1994 (27 ugrad students; 10 grad students); Spr 1995 (10 grad students).

Stat 596: Seminar - Theory of Estimation: Measure theoretic level statistical theory for advanced graduate students in statistics and applied math. (3 sem hr).  
Taught: Spr 1992 (5 students).

Stat 596: Data Analysis Workshop: Workshop in applied data analysis for graduate students in statistics and applied math. (1 sem hr)  
Taught: Fall 1992 (18 students); Spr 1993 (18 students); Fall 1994 (15 students).

Stat 677: Statistical Methods for Survival Analysis: Advanced survival analysis for statistics graduate students (3 sem hr)  
Taught: Fall 1993 (10 students).

Stat 641: Statistical Consulting: Experience in statistical consulting on real problems for statistics graduate students (3 sem hr)  
Taught: Spr 1993 (8 students); Spr 1994 (5 students).

#### University of Washington

BIOST/STAT 111: Seminars in Applied Stat: Lectures in applied statistics as a survey course for undergraduate nonmajors (1qtr hr)

Taught: Spr 1996 (33 students); Spr 1997 (64 students).

BIOST 512: Medical Biometry II: Applied regression analysis for nonmajor graduate students (4 qtr hr)

Taught: Win 1996 (76 students); Win 1997 (102 students); Win 1998 (57 students); Win 1999 (59 students); Win 2000 (60 students).

STAT 512: Mathematical Statistics I: Theory of mathematical statistics for first year graduate students in statistics, biostatistics, and quantitative ecology (4 qtr hr)

Taught: Fall 2003 (45 students).

STAT 513: Mathematical Statistics II: Theory of mathematical statistics for first year graduate students in statistics, biostatistics, and quantitative ecology (4 qtr hr)

Taught: Win 2004 (42 students).

BIOST 514: Biostatistics I: Introductory applied statistics for biostatistics graduate students (4 qtr hr)

Taught: Fall 1999 (21 students); Fall 2000 (19 students); Fall 2005 (12 students concurrent with Biost 517); Fall 2006 (12 students concurrent with Biost 517); Fall 2007 (14 students concurrent with Biost 517); Fall 2009 (21 students concurrent with Biost 517)

BIOST 515: Biostatistics II: Introductory applied statistics for biostatistics graduate students (4 qtr hr)

Taught: Win 2006 (12 students concurrent with Biost 518); Win 2007 (12 students concurrent with Biost 518); Win 2008 (14 students concurrent with Biost 518).

BIOST 517: Applied Biostatistics I: Introductory applied statistics for nonmajor graduate students (4 qtr hr)

Taught: Fall 2001 (80 students); Fall 2002 (79 students); Fall 2005 (60 students); Fall 2006 (56 students); Fall 2007 (51 students), Fall 2009 (86 students)

BIOST 518: Applied Biostatistics II: Second quarter of introductory applied statistics for nonmajor graduate students (4 qtr hr)

Taught: Win 2002 (70 students); Win 2003 (61 students); Win 2006 (52 students), Win 2007 (46 students), Win 2008 (47 students).

BIOST 524: Design of Medical Studies: Issues in the design of clinical trials for graduate students in biostatistics and other public health disciplines (3 qtr hr)

Taught: Spr 2000 (24 students), Spr 2010.

BIOST/STAT 533: Theory of Linear Models: Theory underlying linear regression and ANOVA for biostatistics and statistics graduate students (3 qtr hr)

Taught: Spr 1999 (13 students), Spr 2009 (17 students).

BIOST/STAT 570: Advanced Applied Linear Models: Statistical methodology for regression analysis of independent data taken by second year PhD students in biostatistics and statistics (3 qtr hr)

Taught: Fall 1996 (17 students); Fall 1997 (20 students); Fall 1998 (24 students).

BIOST/STAT 578: Special Topics - Data Analysis: Experience in applied data analysis and report writing for second year PhD students in biostatistics and statistics (1-2 qtr hr)

Taught: Spr 2000 (8 students); Fall 2003 (12 students).

BIOST/STAT 578: Special Topics – Introductory Data Analysis: Experience in applied data analysis and report writing for first year students in biostatistics and statistics (3 qtr hr)

Taught: Spr 2005 (13 students).

BIOST/STAT 578: Special Topics – Group Sequential Methods: Overview of group sequential clinical trials for advanced biostatistics graduate students (1 qtr hr)

Taught: Win 2000 (15 students).

BIOST/STAT 578: Special Topics – Statistical Refereeing: Experience in providing statistical review of manuscripts submitted for publication to applied journals (1 qtr hr)

Taught: Spr 2002 (13 students).

BIOST/STAT 578: Special Topics – Statistical Design of Clinical Trials: For advanced biostatistics graduate students (3 qtr hr)

Taught: Sum 2003 (12 students).

BIOST/STAT 590: Statistical consulting: Experience in providing real statistical consultation for advanced biostatistics graduate students (3 qtr hr)

Taught: Fall 2001 (8 students); Spr 2002 (8 students), Fall 2008 (8 students)

GEN ST 197: Freshman Seminar - Expanding Medical Knowledge: Issues in Clinical Experimentation: Informal freshman seminar providing survey of issues in medical study design (1 qtr hr)

Taught: 15-17 freshmen taught in each of Fall 1995; Spr 1996; Fall 1996; Win 1997; Spr 1997; Fall 1997; Win 1998; Fall 1998; Win 1999; Fall 1999; Win 2000.

## b) Other Teaching

### University of Arizona

*College of Medicine Enrichment Elective: Introduction to Clinical Trials:* Informal seminar giving a brief overview of clinical trial design and interpretation. Meeting 1 hour/week for 6 weeks, non-credit. Enrollment: 4 first and second year medical students. Taught: Spr 1990.

University of Washington

*Epidemiology and Biostatistics: Applied Regression Analysis:* Overview of regression analysis techniques. Meeting 2 hours/day for 5 days. Sponsored by Veteran's Administration. Enrollment: 50 medical researchers. Taught (and videotaped): Sum 2003.

*Distance Learning- Group Sequential Clinical Trials:* Pilot course for distance learning program in collaboration with 6 pharmaceutical companies. Lectures on CD, web-streaming; interactive sessions via teleconferencing. Developed and taught: 1998-1999.

Short Courses

*Design, Monitoring, and Analysis of Group Sequential Clinical Trials:* One to three day short courses on clinical trial design illustrated with S+Seqtrial.

Insightful Corporation, Princeton NJ (Jun 1999), Washington DC (Mar 2000), London UK (Jun 2000), Basel Switz (Jun 2000), Princeton NJ (Nov 2000), Basel Switz (Feb 2003)

University of Reading, Reading UK (Jul-Aug 1999)

Australasian Region of IBC, Hobart Australia (Dec 1999)

Lilly, Indianapolis IN ( 2000)

ICOS Corporation, Bothell WA (Jul 2000)

FDA, Rockville MD (Sep 2000)

Statistics Collaborative, Canaan Valley WV (Jan 2001)

SF Bay Area Chapter of ASA, Palo Alto CA (Jun 2001 )

Puget Sound Chapter of ASA, Seattle WA (Aug 2001)

Joint Statistical Meetings, Atlanta GA (2001), New York NY (2002), San Francisco CA (2003)

*Longitudinal Data Analysis:* Half day continuing medical education on issues related to analyses of longitudinal data.

American Society of Nephrology, San Francisco CA (Oct 2001)

*Data Monitoring Committees:* One day short courses on issues related to monitoring clinical trials (co-taught with Tom Fleming).

Axioresearch, Berkeley CA (Mar 2003)

*Advanced Topics in Survival Analysis:* One day short course on issues related to analysis of survival data in the presence of nonproportional hazards.

Southern California Chapter of ASA, Long Beach CA (May 2004)

*Genetic Data in Clinical Trials:* Two and one-half day short course on the use of genetics data in clinical trials.

Cheju National University, Republic of Korea (Aug 2006)

*Introduction to Clinical Trials:* Two day short course to FDA medical officers and biostatisticians.

CBER, FDA, Rockville MD (Mar 2009, Oct 2009)

### Course Development

#### University of Arizona

*Data Analysis Workshop*: 1 credit hour workshop to be offered each semester for graduate students in Statistics. Each week students analyze real data sets and informally discuss the problems that arise during that analysis. Class meets 2 hours per week, and students can earn up to 6 credits by repeated enrollment. First offered Fall, 1992.

*Statistical Consulting*: 3 credit hour course on Statistical consulting. Students consult with real clients under faculty supervision. 1 hour/week lecture on topics in statistical consulting. First offered Spring, 1993.

#### University of Washington

*Applied Biostatistics (BIOST 517-518)*: Two quarter sequence in introductory biostatistics for nonmajor graduate students. First offered 2001-2002.

### c) Independent Study

Not applicable

## 16. Advising and Formal Mentoring

### a) PhD Dissertations, chair

#### University of Arizona

Justine Ritchie, Applied Mathematics, Ph.D., 1994, "Methods for Statistical Analysis of colonic crypt labeling".

Ramón Durazo, Applied Mathematics, Ph.D., 1994, "Adjustment of Bias in Survival Estimates Following Group Sequential Testing".

John Kittelson, Statistics, Ph.D., 1996: "The design of group sequential trials."

#### University of Washington

Daniel Gillen, Biostatistics, Ph.D., 2003, "The Use of Weighted Logrank Statistics in Group Sequential Trials with Nonproportional Hazards".

Martha Nason, Biostatistics, Ph.D., 2003, "Variable Importance in Tree-based Models". (co-advised with Michael LeBlanc)

Kyle Rudser, Biostatistics, Ph.D., 2007, "Variable Importance in Predictive Models: Separating Borrowing Information and Forming Contrasts".

Bart Burington, Biostatistics, Ph.D., 2009 "Flexible bootstrap monitoring of group sequential trials with longitudinal response data"

Liz Thomas (in progress)

Siobhan Everson-Stewart (in progress)

Abby Shoben (in progress)

Sean Devlin (in progress)

Greg Levin (in progress)

### b) Masters Theses, chair

University of Washington

Shengli Shi, Biostatistics, M.S., 2003.

**c) Mentored Scientists and Postdocs**

Kyle Rudser, Ph.D. (2007 – 2008)

**d) MS and PhD committees in non chair role**University of Arizona

Marcel Nzeukou, Agricultural Economics, Masters Examination Committee  
Craig Abbey, Applied Mathematics, Ph.D. Preliminary Examination Committee  
David Rauschenberg, Applied Mathematics, Ph.D. Final Examination committee  
Jean Merilan, Statistics, Ph.D. Preliminary Examination Committee

University of Washington

Debashis Ghosh, Biostatistics, Ph.D., 1999.  
Annamaria Kausz, Epidemiology, M.S., 1998.  
Karen Lockhead, Epidemiology, M.S., 1998.  
Craig Wang, Epidemiology, M.S., 1999.  
Richard Wang, Biostatistics, M.S., 2003.  
Shelley Tworoger, Epidemiology, Ph.D., 2003.  
Kenneth Adams, Epidemiology, Ph.D., 2003.  
Hao Liu, Biostatistics, Ph.D., 2004  
Andy Bogart, Biostatistics, M.S., 2005.  
David Coblentz, Biostatistics, M.S., 2007  
Judy Zhong, Biostatistics, Ph.D. 2008  
Scott Payseur Economics, Ph.D 2008, GSR)  
Joseph Koopmeiner Biostatistics, Ph.D. 2009  
Andrea Burnett-Hartman (Epidemiology, Ph.D. research in progress, GSR)  
Maggie Au, Biostatistics, M.S., 2009

**e) Other Mentoring (Undergraduate Research, Medical School ISMS Projects, etc.)**University of Washington

Diane Bui, Undergraduate research assistant, 1996.  
Peter Carney, Undergraduate research assistant 2002-2003.  
Mose Andre, Undergraduate research assistant 2003-2005.  
Joshua Rapkin, Undergraduate research assistant 2004-2005.

**f) Academic Advising**University of Washington, Department of Biostatistics

Julie Stoner, Katherine Guthrie, Mark Giganti, Mose Andre, Yuying Jin,  
Amy Laird, Brett Hanscom, Megan Smith, William Cumberland