

BAHJAT QAQISH

Curriculum Vitae

April 2021

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EDUCATION:

1990: PhD, Biostatistics, Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland.

1981-1982: Residency in Internal Medicine, Jordan University Hospital, Amman, Jordan.

1980-1981: Internship, Jordan University Hospital, Amman, Jordan.

1973-1980: M.B.;B.Sc., Jordan University Medical School, Amman, Jordan.

PROFESSIONAL POSITIONS:

2014-current: Professor, Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina.

1997-current: Associate Professor, Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina.

1990-1997: Assistant Professor, Department of Biostatistics, University of North Carolina, Chapel Hill, North Carolina.

1982-1983: Teaching and Research Assistant, Jordan University Medical School, Department of Community Medicine, Amman, Jordan.

1981-1982: Resident, Internal Medicine Residency Program, Jordan University Hospital, Amman, Jordan.

1980: Intern, Jordan University Hospital, Amman, Jordan.

HONORS AND AWARDS:

The Student Recognition Award, The Johns Hopkins University School of Hygiene and Public Health, 1988.

Delta Omega, 1988.

Coauthor of a paper read before the Royal Statistical Society in 1991, published 1992.

Junior Faculty Development Award, University of North Carolina at Chapel Hill, 1992

Winner of the American Society of Radiologic Technologists Jean I. Widger Distinguished Author Award, 2010.

PUBLICATIONS

1. Ivanova, A., Qaqish, B. (2020). Power calculations for the sequential parallel comparison design with continuous outcomes. *Journal of Biopharmaceutical Statistics* **30**, 1121–1129.
2. O’Brien, J. J., Lawson, M. T., Schweppe, D. K., Qaqish, B. F. (2020). Suboptimal Comparison of Partitions. *Journal of Classification* **37**, 435–461.
3. Leonov, S., Qaqish, B. (2020). Correlated endpoints: simulation, modeling, and extreme correlations. *Statistical Papers* **61**, 741–766. DOI: 10.1007/s00362-017-0960-2
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5. O’Brien, J. J., Gunawardena, H. P., Paulo, J. A., Chen, X., Ibrahim, J. G., Gygi, S. P., Qaqish, B. F. (2018). The effects of nonignorable missing data on label-free mass spectrometry proteomics experiments. *Annals of Applied Statistics* **12**, 2075–2095.
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8. Qaqish, B. F., O’Brien, J. J., Hibbard, J. C., Clowers, K. J. (2017). Accelerating high-dimensional clustering with lossless data reduction. *Bioinformatics* **33**, 2867–2872.
9. Myckatyn, T. M., Wagner, I. J., Mehrara, B. J., Crosby, M. A., Park, J. E., Qaqish, B. F., Moore, D. T., Busch, E. L., Silva, A. K., Kaur, S., Ollila, D. W., Lee, C. N. (2017). Cancer risk after fat transfer: A multicenter case-cohort study. *Plastic and Reconstructive Surgery* **139**, 11–18.

10. Gunawardena, H. P., O'Brien, J., Wrobel, J. A., Xie, L., Davies, S. R., Li, S. Q., Ellis, M. J., Qaqish, B. F., Chen, X. (2016). QuantFusion: Novel unified methodology for enhanced coverage and precision in quantifying global proteomic changes in whole tissues. *Molecular & Cellular Proteomics* **15**, 740–751.
11. Chera, B. S., Amdur, R. J., Tepper, J. E., Qaqish, B. F., Green, R., Hayes, N. N., Weiss, J., Grilley-Olson, J., Zanation, A., Hackman, T., Funkhouser, W., Sheets, N. C., Weissler, M., Mendenhall, W. M. (2016). Phase 2 trial of deintensified chemoradiation therapy for low-risk human papillomavirus-associated oropharyngeal squamous cell carcinoma. *International Journal of Radiation Oncology Biology Physics* **94**, 866.
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14. Gunawardena, H. P., Wrobel, J. A., O'Brien, J., Xie, L., Erdmann-Gilmore, P., Davies, S. R., Li, S. Q., Cao, S. McLellan, M., Ruggles, K. V., Fenyó, D., Townsend, R. R., Ding, L., Qaqish, B. F., Ellis, M. J., Chen, X. (2015). Proteogenomic characterization of breast cancer sub-types in patient derived xenografts. *Cancer Research* **75**, Supplement 15.
15. Chera, B. S., Amdur, R. J., Tepper, J. E., Qaqish, B. F., Green, R. L., Aumer, S. L., Hayes, D. N., Weiss, J., Grilley-Olson, J. E., Zanation, A. M., Hackman, T., Funkhouser, W. K., Sheets, N. C., Weissler, M., Mendenhall, W. M. (2015). Phase 2 trial of de-intensified chemoradiation therapy for favorable-risk human papillomavirus-associated oropharyngeal squamous cell carcinoma. *International Journal of Radiation Oncology Biology Physics* **93**, 976–985. doi: 10.1016/j.ijrobp.2015.08.033
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between spontaneous and induced sputum in chronic obstructive pulmonary disease (COPD). *American Journal of Respiratory and Critical Care Medicine* **191**, meeting abstract A2914.

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43. Flores, G., Culton, D. A., Qaqish, B. F., Maldonado, M., Prisanh, P., James, K., Aoki, V., Hans, G., Rivitti, E., Diaz, L. A. (2011). The antidesmosomal autoantibody profile in fogo selvagem supports epitope spreading in disease pathogenesis. *Journal of Investigative Dermatology* **131**, S1, 80.

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47. Metcalf, K.L., Adams, R.D., Qaqish, B., Church, J. A. (2010). Survey of R.T.s With Doctorates: Barriers To Conducting Research. *Radiologic Technology* **81**, 417–427. **Winner of the American Society of Radiologic Technologists Jean I. Widger Distinguished Author Award, 2010.**
48. Xie, L., Saynak, M., Chiu, W Bailey, J.E., Fried, D.V., Veeramachaneni, N.K., Hubbs, J.L., Feins, R.H., Qaqish, B.F., Marks, L.B., (2010). FDG-PET vs. histologic staging of the mediastinum in patients with pathologic N0-1 non-small cell lung cancer (NSCLC): What should be the gold standard? *Journal of Thoracic Oncology* **5**, S7, 511–512.
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83. Qaqish, B.F., Preisser J.S. (2000). Generalized Linear Models for Independent and Dependent Responses. In *Handbook of Statistics Bioenvironmental and Public Health Statistics* (Eds., Sen, P.K. and Rao, C.R.) **18**, 193–222.
84. Marcus, P.M., Newman, B. Millikan, R.C., Moorman, P.G., Baird, D.D., Qaqish, B.F. (2000). The association of adult cigarette smoking, alcoholic beverage consumption, environmental tobacco smoke, and ionizing radiation with subsequent breast cancer risk. *Cancer Causes and Control* **11**, 271–278.

85. Curtis P, Mintzer M, Morrell D, Resnick AC, Hendrix S, Qaqish BF (1999). Characteristics and quality of Papanicolaou smears obtained by primary care clinicians using a single commercial laboratory *Archives of Family Medicine* **8**, 407–413.
86. Qaqish, B.F., Preisser, J. S. (1999). Resistent fits for regression with correlated outcomes: an estimating equation approach. *Journal of Statistical Planning and Inference* **75**, 415–431.
87. Preisser, J. S., Qaqish, B.F. (1999). Robust regression for clustered data with application to binary responses. *Biometrics* **55**, 574–579.
88. Kinsinger, L.S., Harris, R., Qaqish, B. F., Strecher, V., Kaluzny, A. (1998). Using an office system intervention to increase breast cancer screening. *Journal of General Internal Medicine* **13**, 507–514.
89. DeMasi, R.A., Qaqish, B.F., Sen P.K. (1998). A Family of Bivariate Failure Time Distributions with Proportional Crude and Conditional Hazards. *Communications in Statistics: Theory and Methods* **27**, 365–394.
90. Curtis P, Morrell D, Hendrix S, Mintzer M, Resnick JC, Qaqish BF (1997). Recall and treatment decisions of primary care providers in response to Pap smear reports. *American Journal of Preventive Medicine* **13**, 427–431.
91. DeMasi, R.A., Qaqish, B.F. and Sen, P.K. (1997). Statistical models and asymptotic results for multivariate failure time data with generalized competing risks. *Sankhya-A* **59**, 408–434
92. Qaqish, B.F., Zhou, H. and Cai, J. (1997). On Case-control sampling of clustered data. *Biometrika* **84**, 983–986.
93. Marcus, P.M., Moorman, P.G., Millikan, R.C., Baird, D.D., Qaqish, B. and Newman, B. (1997). Adolescent reproductive events and subsequent breast cancer risk. *Breast Cancer Research and Treatment* **46**, 82.
94. Chang, S., Hulka, B.S., Baird, D.D., Ingle, J.N. Newman, B., Graham II, M.L., Qaqish, B., Donohue, J.H. and Melton III, L.J. (1997). Breast cancer survival and the timing of tumor removal during the menstrual cycle. *Cancer Epidemiology, Biomarkers & Prevention* **6**, 881–886.
95. Martin, S.L., Rieger, R.H., Kupper, L.L., Meyer, R.E., Qaqish, B.F. (1997). The effect of incarceration during pregnancy on birth outcomes. *Public Health Reports* **112**, 340–346.
96. Bates, B.A., Detterbeck, F.C., Bernard, S.A., Qaqish, B.F., Tepper, J.E. (1996). Concurrent radiation therapy and chemotherapy followed by esophagectomy for localized esophageal carcinoma. *Journal of Clinical Oncology* **14**, 156–163.

97. Qaqish, B.F. (1996). Quality of life analyses in cancer studies. *Journal of Applied Statistical Science* **4**, 347–356.
98. Morrell D., Curtis P., Mintzer M, Resnick J. C., Hendrix S., Qaqish B.F. (1996). Perceptions and opinions on the performance of pap smears: A survey of clinicians using a commercial laboratory. *American Journal of Preventive Medicine* **12**, 271–276.
99. Preisser J.S., Qaqish B.F. (1996). Deletion diagnostics for generalized estimating equations. *Biometrika* **83**, 551–562.
100. Newman B., Moorman P.G., Milligan R., Qaqish B.F., Gradts J., Aldrich T.E., Liu, E.T. (1995). The Carolina Breast Cancer Study: Integrating population-based epidemiology and molecular biology. *Breast Cancer Research and Treatment* **35**, 51–60.
101. Rogers, L., Varia, M., Halle, J., Freddo, J., Qaqish, B., O’Keefe, T. and Fowler, W. (1993). ³²P following negative second look laparotomy for epithelial ovarian cancer. *Gynecologic Oncology* **50**, 141–146.
102. Liang, K-Y., Zeger, S.L., Qaqish, B.F. (1992). Multivariate regression analyses for categorical data. *Journal of the Royal Statistical Society B* **54**, 3–40. (**with discussion**)
103. Qaqish, B. F., Liang, K-Y. (1992). Marginal models for correlated binary data with multiple classes and multiple levels of nesting. *Biometrics* **48**, 939–950.
104. Weissler, M. C., Melin, S., Sailer, S. L., Qaqish, B. F., Rosenman, J. G., Pillsbury III, H.C. (1992). Simultaneous chemoradiation in the treatment of advanced head and neck cancer. *Archives of Otolaryngologic Head and Neck Surgery* **118**, 806–810.
105. Kelen, G. D., Green, G. B., Purcell, R. H., Chan, D. W., Qaqish, B. F., Sivertson, K. S., Quinn, T. C. (1992). Hepatitis B and hepatitis C in emergency department patients. *The New England Journal of Medicine* **326**, 1399–1404.
106. Tardif, C.P., Partin, A.W., Qaqish, B.F., and Mohler, J.L. (1992). Comparison of nuclear shape in aspirated and histologic specimens of prostatic carcinoma. *Analytical and Quantitative Cytology and Histology* **14**, 474–482.
107. Kaluzny, A.D., Harris, R., Strecher, V., Stearns, S., Qaqish, B., and Leininger, L. (1991). Prevention and early detection activities primary care: New directions for implementation. *Cancer Detection and Prevention* **15**, 459–564.
108. Kaufmann, W., Rice, J., MacKenzie, S., Smith, G., Wenk, M., Devor, D., Qaqish, B., and Kaufman, D. (1991). Proliferation of carcinogen-damaged hepatocytes

- during cell-cycle-dependent initiation of hepatocarcinogenesis in the rat. *Carcinogenesis* **12**, 1587–1593.
109. Floccare, D. J., Kelen, G. D., Altman, R. S., Hassett, J. M., Qaqish, B., Ness, P. M. pm, Sivertson, K. T. (1990). Rapid infusion of additive red-blood-cells - alternative techniques for massive hemorrhage. *Annals of Emergency Medicine* **19**, 129–133
 110. Kelen, G. D., Fritz, S., Qaqish, B. (misspelled Qaquish), Floccare, D., Digiovanna, T., Baker, J. L., Sivertson, K. T., Quinn, T. C. (1989). Substantial increase in human immunodeficiency virus (HIV-1) infection in critically ill patients: 1986 and 1987 compared. *Annals of Emergency Medicine* **18**, 378–382.
 111. Menkes, M. S., Matthews, K.A., Krantz, D. S., Lundberg, U., Mead, L. A., Qaqish, B., Liang, K., Thomas, C. B., Pearson, T. A. (1989). Cardiovascular reactivity to the cold pressor test as a predictor of hypertension. *Hypertension* **14**, 524–530.
 112. Kelen, G. D., Fritz, S., Qaqish, B., Brookmeyer, R., Baker, J. L., Kline, R. L., Cuddy, R. M., Goessel, T. K., Floccare, D., Williams, K. A., Sivertson, K. T., Altman, S., Quinn, T. C. (1988). Unrecognized human immunodeficiency virus infection in emergency department patients. *The New England Journal of Medicine* **318**, 1645–1650.
 113. Zeger, S. L., Qaqish, B. (1988). Markov regression models for time series: A Quasi-likelihood approach. *Biometrics* **44**, 1019-10-31.

RESEARCH SUPPORT AS PRINCIPAL INVESTIGATOR

PI, SPORE Biostatistics Core at the Lineberger Comprehensive Cancer Center. This was funded for three cycles, five years each.

PI, NIH RO1 grant, Analysis of association for multivariate binary data, 2005-2009. \$635,000.

PI, tPPG Biostatistics and Data Management Core, 2012-2016.

INVITED RESEARCH-RELATED TALKS:

A theme of linearity in non-linear models for multivariate binary responses. Johns Hopkins University Bloomberg School of Public Health. Baltimore, MD, November 18, 2013

Software development for GEE and ORTH. John S. Preisser*, Bahjat F. Qaqish. ENAR Meeting, March 15-18, 2009, San Antonio, Texas.

Introduction to Simulation in Statistics. GSK Biostatistics Annual Conference. November, 2008. Research Triangle Park, North Carolina.

Qaqish B. F. Models for Multivariate Categorical Outcomes. Chinese Statistical Society Meeting, 2007, Raleigh, North Carolina. Invited.

Qaqish B. F. Models for Multivariate Categorical Outcomes. Frontiers in Applied and Computational Mathematics, New Jersey Institute of Technology, Newark, New Jersey, May 14-16, 2007. Invited.

Preisser JS. Lu B. Qaqish BF. Finite Sample Bias Corrections to Sandwich Covariance Estimators for Longitudinal and Clustered Data. Joint Statistical Meetings in Salt Lake City, July 29-August 2, 2007, Utah.

Qaqish BF. Models for Multivariate Categorical Outcomes. Chinese Statistical Society Meeting, 2007, Raleigh, North Carolina.

Qaqish BF. Models for Multivariate Categorical Outcomes. Frontiers in Applied and Computational Mathematics, New Jersey Institute of Technology, Newark, New Jersey, May 14-16, 2007.

Preisser JS. Lu B. Qaqish BF. Finite Sample Bias Corrections to Sandwich Covariance Estimators for Longitudinal and Clustered Data. Joint Statistical Meetings in Salt Lake City, July 29-August 2, 2007, Salt Lake City, Utah.

Qaqish*, B. F., Denogean, L., Karr, A. A stochastic process approach to the analysis of swapping for categorical variables. Data Confidentiality Mid-Year Workshop, A Working Group in National Defense and Homeland Security at SAMSI, Hosted by National Center for Health Statistics, Hyattsville, MD March 13, 2006.

Qaqish, B. F. Statistical issues in releasing and sharing data. SRCOS/ASA 2006 Summer Research Conference on Statistics. June 5-7, 2006, Houston, Texas.

Qaqish B.F. The link between cancer registries, clinical and epidemiologic research. The 4th UAE International Cancer Conference, Abu Dhabi, United Arab Emirates, January 28-31, 2001.

Qaqish B.F. Simulation of correlated binary variables. The American Statistical Association, North Carolina Chapter, September 2000.

Qaqish B.F. Variance components for dependent qualitative responses. The University of Florida Statistics Symposium 2000 on Selected Topics in Variance Components Analysis, Gainesville, Florida, January 20-22, 2000

Qaqish B.F. Deletion diagnostics for generalized estimating equations. The Seventh Eugene Luckacs Symposium, Bowling Green State University, Bowling Green, Ohio, April 25-27, 1997.

Statistical Methods for Quality of Life in Cancer Studies. Hurghuda, Egypt, Dec, 1994.

Discussant in a session on Analysis of Correlated Data. The American Statistical Association Joint Meetings, August 1993.

Statistical Methods for Longitudinal Data. Medical School, Yarmouk University, Jordan, May, 1993.

Invited speaker in a session on Statistical Computing for Longitudinal Data. Joint Meeting of the Biometric Society, East North American Region, March 1990.

OTHER RESEARCH-RELATED PRESENTATIONS:

Chera, B.S., Amdur, R.J., Tepper, J.E., Qaqish, B. F., Hayes, N.N., Weiss, J., Grilley-Olson, J., Zanation, A., Hackman, T., Zevallos, J., Patel, S., Sheets, N. C., Weissler, M. C., Mendenhall, W. M. (2017). Two-year clinical outcomes of de-intensified chemoradiotherapy for low-risk HPV-associated oropharyngeal squamous cell carcinoma. *Journal of Clinical Oncology* **35**, supplement 15, meeting abstract 6044.

Desai, P. C., Deal, A. M., Pfaff, E. R., Qaqish, B., Hebden, L. M., Park, Y., Ataga, K. I. (2013). Red Blood Cell Alloimmunization is Associated with Transfusion for Acute Sickle Cell disease-Related Complications. *American Journal of Hematology* **88**, E21.

Qaqish, B. F. (2013). Maximum-Likelihood Estimation of Marginally Specified Joint Models for the Mean and the Correlation for Clustered Binary Outcomes. Presented at the Joint Statistical Meetings of the American Statistical Association, August 3-8, 2013, Montreal, Canada.

Bordonali, E., Hudgens, M. G., Qaqish, B. F. (2013). Dorfman Testing with Correlated Responses. Presented at the Joint Statistical Meetings of the American Statistical Association, August 3-8, 2013, Montreal, Canada.

Arastu, N., Chen, R. C., Jackson, M., Green, R. L., Xu, Z. S., Camporeale, J., Collichio, F. A., Qaqish, B. F., Marks, L. B. **International Journal of Radiation Oncology Biology Physics** **84**, S S99. Presented at the 54th Annual Meeting of the American-Society-for-Radiation-Oncology (ASTRO) Location: Boston, MA. OCT 28-31, 2012. Sponsor(s): Amer Soc Radiat Oncol (ASTRO) Accession Number: WOS:000310542900246 Issue: 3 Supplement: S Pages: S99-S99 Published: NOV 1 2012

Ignaccolo, R., Kim, Y., Qaqish, B. F., Smith, R. L. (2008). An Analysis of the Potential Impact of Various Ozone Regulatory Standards. The American Statistical Association Joint Meetings, August 2008, Colorado.

Andraca-Carrera, E., Qaqish, B., (2008). Variance estimation in regression models. ENAR Meeting, March, 2008, Virginia.

Qaqish BF, Preisser JS. Some aspects of model assessment when using GEE. ENAR Meeting, March 11-14, 2007, Atlanta, Georgia. Contributed.

Andraca E, Qaqish BF, Preisser JS. Within-cluster resampling and generalized estimating equations. ENAR Meeting March 11-14, 2007, Atlanta, Georgia. Contributed.

Edwards L, Muller KE, Wolfinger RD, Schabenberger O. An R-square statistic for fixed effects in the Gaussian mixed model with structured covariance. ENAR Meeting March 11-14, 2007, Atlanta, Georgia.

John S. Preisser*, Jamie Perin and Bahjat F. Qaqish, Deletion Diagnostics for Alternating Logistic Regressions. ENAR, Tampa, Florida, March 26-29, 2006.

Bahjat F. Qaqish*, Anastasia Ivanova and Eugenio Andraca. Multivariate Logistic Models. ENAR, Tampa, Florida, March 26-29, 2006.

Schell, M. J. Qaqish, B. F., Yankaskas, B. C., Amamoo, M. A., Barlow, W. E. (2005). Using Isotonic Regression to Identify the Ideal Recall Rate in Screening Mammography. ENAR Spring Meeting, March 20-23, 2005, Austin, TX.

Qaqish, B.F. and Ivanova, A. (2004). Marginal models for Binary Data: Existence, Uniqueness and Implications. ENAR Spring Meeting, March 28-31, 2004, Pittsburgh, PA.

Lee, J-H., and Qaqish, B.F. (2004) A latent Change-point Model Using a Generalized Estimating Equations Approach. ENAR Spring Meeting, March 28-31, 2004, Pittsburgh, PA.

Zink, R.C. and Qaqish, B.F. (2003). Orthogonalized residuals for estimation of marginally specified association parameters in multivariate binary data. The Spring meeting of the International Biometric Society, ENAR, March 30-April 2, 2003, Tampa, Florida. Presented by Richard Zink.

Lee, J.H. and Qaqish, B.F. (2003). Modified GEE and goodness-of-fit test with correlated binary responses. The Spring meeting of the International Biometric Society, ENAR, March 30-April 2, 2003, Tampa, Florida. Presented by J-Hyun Lee.

DeMasi, R. A., Qaqish, B.F. and Sen, P.K. (1997). Multivariate Cox Regression with generalized competing risks. The Spring meeting of the International Biometric Society, ENAR, March 23-26, 1997. Memphis, Tennessee. Presented by Ralph DeMasi.

Preisser J.S., Qaqish B.F. Deletion diagnostics for generalized estimating equations. Joint Meeting of the Biometric Society, East North American Region, April 1995. (Won an ENAR travel award for John Preisser)

Preisser J.S., Qaqish B.F. Robust regression with generalized estimating equations. The American Statistical Association Joint Meetings, August 1995.

Qaqish, B.F. and Knuiman, M., Quasilikelihood regression for length-biased data. The American Statistical Association Joint Meetings, August 1992.

Qaqish, B.F. and Liang, K., Marginal Models for Correlated Binary Data with Multiple Classes and many Levels of Nesting. Joint Meeting of the Biometric Society, East North American Region, April 1990.

Kelen, G., Fritz, S., Qaqish, B., Brookmeyer, R., Floccare, D., and Quinn, T. Unrecognized HIV Infection in General Emergency Patients. The Fourth International Conference on AIDS, June 1988.

Zeger, S. and Qaqish, B. A Quasi-Likelihood Approach to Time Series Data. The American Statistical Association Joint Meetings, August 1987.

Pearson, T.A., Qaqish, B. and Mead, L. Physician Heal the Self?" Sources of Medical Care and Use by Middle-Aged Physicians. The American Federation for Clinical Research Meetings, 1987.

Kelen, G.D., Floccare, D., Altman, S., Qaqish, B., Ness, P., and Silverton, K.T. Rapid Volume Resuscitation With New ADSOL-PRBCs: Effect of New Trauma-Tubing and Other Infusion Techniques on Transfusion Times. Clinical and Investigative Medicine Annual Meeting, September 1987.

Menkes, M., Krantz, D.S., Lundberg, U., Mead, L., Qaqish, B., Liang, K. and Pearson, T. Does the Cold Pressor Test Predict Subsequent Hypertension? The American Heart Association 60th Scientific Sessions, November 1987.

SERVICE ACTIVITIES IN THE DEPARTMENT OF BIOSTATISTICS:

Chair of the Biostatistics Masters Examinations Committee 2009–2019.

Member of the Biostatistics Doctoral Examinations Committee 2003–present.

Member of the Biostatistics Information Technology Committee, 1990–present.

Chairman of the Barry H. Margolin Memorial Committee. The memorial service took place on March 3, 2010. A memorial session was held at the Joint Statistical Meetings in Vancouver, Canada, August 2010.

Member of the Faculty Search Committee, 1991–1995. The work of this committee resulted in the hiring of three new faculty members in the Department of Biostatistics.

Member of the Examinations Committee, Department of Biostatistics, 1990–2002.

Member of the Student Support Committee, Department of Biostatistics, 1990–1997.

Member of the Information Technology Advisory Committee, Department of Biostatistics, 1990–1991.

Chair of Seminar Committee, 1994–1996

PhD Curriculum Review Committee, 1995–2000.

COURSES TAUGHT IN THE DEPARTMENT OF BIOSTATISTICS:

- Developed a new course, BIOS 992, Masters Research Project and Paper. Offered in 2021 (Spring), co-taught with Professor Baiming Zou.
- Longitudinal Data Analysis (BIOS 667): This is a masters-level course taught in 2017 (Fall) - 2020 (Fall).
- Longitudinal Data Analysis (BIOS 767): This is a doctoral-level course taught in 2013–2019 (spring).
- Statistical Computing (BIOS 735): This is a new doctoral-level course co-taught in 2013 with three other instructors.
- Generalized Linear Models, Theory and Applications: This is a doctoral-level course developed in 1990 and taught from 1990 to 2006. The course number changed over time from 240 to 262, 263 and is currently BIOS 763.
- Introductory Survival Analysis, BIOS 180, new number BIOS 680.
- Advanced Survival Analysis, BIOS 280, new number BIOS 780.
- Statistical Computing: This is a doctoral-level course developed in 1998 and taught from 1998 to 2005.
- Probability and statistical inference II (Bios 661): This is a masters-level course taught in 2008-2011.
- Introduction to statistical computing in SAS and R: A series of lectures for the BSURE program, 2009, 2010, 2011.

OTHER TEACHING AND RESEARCH ACTIVITIES:

Introduction to Simulation in Statistics. GSK Biostatistics Annual Conference. November, 2008. Research Triangle Park, North Carolina.

Short course: Generalized estimating equations. January 20 and 27, 1999, Division of Biometry, Duke University, Durham, North Carolina.

Special Epidemiology Methods seminar: Overview of methods for longitudinal data analysis. January 12, 1999, Department of Epidemiology, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Special Epidemiology Methods seminar: Generalized estimating equations. February 9, 1999, Department of Epidemiology, The University of North Carolina at Chapel Hill, Chapel Hill, North Carolina.

Short course: Generalized estimating equations theory and applications, June 16, 1995, Ciba-Geigy Pharmaceutical, Summit, New Jersey.

Teaching assistant for many biostatistics courses. 1984-1989, Department of Biostatistics, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland.

Programmer/Data Analyst, 1986-1988, "The Precursors Study", Johns Hopkins University Medical School, Baltimore, Maryland.

Programmer/Data-Analyst, 1984-1986, "The Role of Systematic Hypertension in Diabetic Retinopathy", The Johns Hopkins Hospital, Wilmer Eye Institute, Baltimore, Maryland.

Lectures on GLIM (Generalized Linear Interactive Modelling) in a Course on Advanced Linear Models. Department of Biostatistics, The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland.

SERVICE AT SCHOOL AND UNIVERSITY LEVEL:

Voting member of Protocol Review Committee, the Lineberger Comprehensive Cancer Center, 1995–present.

Member of the Biostatistics Core at the Lineberger Comprehensive Cancer Center, 1990–present.

Member of Clinical Cancer Program Advisory Committee, The Lineberger Cancer Center, 1990–2000.

Reviewer for the University Research Council, 2000–2001.

Deputy Director of the Biostatistics Core Facility, Lineberger Cancer Center, 1990–1995.

Member of Data Processing Committee, The Johns Hopkins University School of Hygiene and Public Health, 1988–1989.

SERVICE AT THE NATIONAL AND INTERNATIONAL LEVEL:

Associate Editor for Epidemiology and Statistics, *The Journal of Investigative Dermatology*, 2005–2007.

Associate Editor, *Journal of Statistical Planning and Inference*, 2005–2006.

Refereeing of journal articles for many journals including

Biometrics,
Biometrika,
Statistics in Medicine,
Journal of Multivariate Analysis,
Journal of the American Statistical Association,
Psychometrika,
Technometrics,

Environmental and Molecular Mutagenesis. The American Journal of Epidemiology,
The American Statistician,
The Annals of the Institute of Statistical Mathematics,
The Canadian Journal of Statistics,
Journal of Investigative Dermatology.

Member of Johns Hopkins Biostatistics Alumni Advisory Council (1993).

Reviewer for The National Institutes of Health Study Section, Visual Sciences A-1
(1991).

TEACHING AT THE UNIVERSITY LEVEL:

Developed a series of five lectures on Introductory Biostatistics for fellows at the
Lineberger Clinical Cancer Center. The series was given in 1995.

Developed an overview lecture on Survival Analysis for participants in the Clinical
Scholars Program in the Medical School. This lecture was given four times; in 1993,
1994, 1995 and 1996.

Developed an overview lecture on Biostatistics for participants in the Cancer Edu-
cation Program summer internship. This lecture was given in 1994.

DOCTORAL DISSERTATIONS SUPERVISION:

Dissertation advisor of:

Ryan McBride, DrPH, Biostatistics, current.

Jonathon O'Brien, PhD, Biostatistics, graduated.

Kunthel By, PhD, Biostatistics, graduated in 2012.

Eugenio Andraca, PhD, Biostatistics, graduated in 2008.

Ji-Hyun Lee, DrPH, Biostatistics, graduated in 2003.

Richard Zink, PhD, Biostatistics, graduated in 2003.

Carlos Henriquez, PhD, Biostatistics, graduated in 2002.

Terry Cox, PhD, Biostatistics, graduated in 1998.

Ralph DeMasi, PhD, Biostatistics, graduated in 1995 (jointly with
Professor P. K. Sen).

John Preisser, PhD, Biostatistics, graduated in 1995.

Member of dissertation committees of:

Beibo Zhao, PhD, Biostatistics, current.

Tracie Shing, DrPH, Biostatistics, current.

Pooja Saha, PhD, Biostatistics, current.

Jeanine Matuszewski, PhD, Biostatistics, graduated in 2013.
Laura Lapkaskite, PhD, Biostatistics, graduated in 2013.
Changfu Xiao, PhD, Biostatistics, graduated in 2011.
JaEun Choi, PhD, Biostatistics, graduated in 2011.
Jamie Perin, PhD, Biostatistics, graduated in 2009.
Vangelis Evangelou, PhD, Statistics, graduated in 2009.
Jean Orlein, DrPH, Biostatistics, graduated in 2008.
Stas Kolenikov, PhD, Statistics, graduated in 2005.
Kai Wang, PhD, Biostatistics, graduated in 2003.
Stephanie Cano, PhD, Biostatistics, graduated in 2003.
Molly Young, DrPH, Biostatistics, graduated in 2003.
Helena Furburg, PhD, Epidemiology, graduated in 2001.
Pamela Marcus, PhD, Epidemiology, graduated in 1999.
Maha Chabhar, PhD., Biostatistics, graduated in 1998.
Len Clegg, PhD, Biostatistics, graduated in 1998.
Kim Ho, PhD., Biostatistics, graduated in 1996.
Antonio DeLima, PhD, Biostatistics, graduated in 1995.
Shine Chang, PhD, Epidemiology, graduated in 1995.
Yuan-Li Shen, PhD, Biostatistics, graduated in 1993.
Paul Godley, PhD, Epidemiology, graduated in 1992.

Assisted the committees of:

Nicholas Ng'andu, DrPH, Biostatistics, graduated in 1995.
Alula Hadgu, DrPH, Biostatistics, graduated in 1993.

MASTERS THESES SUPERVISION:

Thesis advisor of:

Xiaoping Yang, MS, Biostatistics.
Brian Sheff, MS, Biostatistics, graduated in 1994.
Habib Moalem, MS, Biostatistics, graduated in 1993 (jointly with
Professor Y. Truong).
Richard Croutharmel, MS, Biostatistics, graduated in 1992.

Thesis reader for:

Tianhao Song, MS, Biostatistics, 2021.
Camille Liu, MS, Biostatistics, 2021.
Yixiao Dong, MS, Biostatistics, 2021.
Brian Nealon, MS, Biostatistics.

ACADEMIC ADVISORY ROLE:

Terry Cox, PhD.
Rock Periera, MS.
Richard Croutharmel, MS.
Tom Byron, MPH.
Stephanie Silva, MS.
Justin Lashely, MS.

OTHER GRADUATE SUPERVISION:

Brian Nealon - GRA - Lineberger Cancer Center.
Sean O'Brien - GRA - Lineberger Cancer Center.
Habib Moalem - GRA - Lineberger Cancer Center.
Hany Zayed - GRA - Family Medicine.
Brian Sheff - MS - Cancer Education Program, summer internship.
Percy Mottley - MPH - Consulting Project.
Habib Moalem - MS - Consulting Project.
Terry Cox - GRA - Lineberger Cancer Center.
Clinton Alverson- GRA - Family Medicine.
Yi-Yun Chang - GRA - Family Medicine.
Scott Jens - MPH - Consulting Project.
Ahinee Amamoo - MPH - Consulting Project.

OTHER SUPERVISION:

Misha Lavrov - BSURE program, 2009.