Curriculum Vitae
Keith E. Muller

PERSONAL INFORMATION

2004 Mowry Road, Room 2246, PO Box 100147 Gainesville, FL 32610-0147
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web sites hobi.med.ufl.edu/muller and *www.SampleSizeShop.org*
Born August 13, 1948, Peoria, Illinois. Married 1972, no children.

EDUCATION

M. S. Statistics, Mathematics minor, 1981, Univ. North Carolina, Chapel Hill

Ph. D. Quantitative Psychology, Statistics minor, 1976, Univ. North Carolina, Chapel Hill

M. A. Psychology, 1971, Bradley University, Peoria, Illinois

B. S. Psychology, 1970, Bradley University, Peoria, Illinois

PROFESSIONAL EXPERIENCE

Health Outcomes and Biomedical Informatics, COM, University of Florida, Professor
    2017-2020 University Term Professor
    2017-2018 Director of Division of Implementation and Decision Sciences
    2015-2018 Associate Chair
    2010-2017 Methodology Division Chief
    2009-2014 Director Statistics Core SE Center for Research to Reduce Disparities in Oral Health
Epidemiology and Health Policy Research, COM, University of Florida
    2006-2010 Professor and Director of the Division of Biostatistics
Biostatistics, University of North Carolina, Chapel Hill
    2006-present Professor Emeritus
    2004-2006 Professor
    1987-2004 Associate Professor
    1984-1987 Assistant Professor
    1978-1984 Research Assistant Professor
Human Factors, Bell Laboratories, Holmdel, New Jersey
    1977-1978 Member of the Technical Staff
Educational Psychology, University of Illinois, Urbana
    1976-1977 Visiting Assistant Professor

HONORS

Fellow, American Statistical Association.

Dissertation chairman and mentor for two students who subsequently won the
    the James Grizzle Outstanding Young Graduate Award in UNC Biostatistics (2004, 2006).

Chairman for dissertation which won 1999 Margolin Award for best in UNC Biostatistics.

Nominated for 1986 APHA Statistics Section Spiegelman Award.

Nominated for teaching awards in 1977, 1983 and 1986.

Coauthored two articles, 1982 USEPA Scientific and Technology Award second place, Health Effects.

Best paper in session awards at SAS Users' Group International in 1981 and 1983.

MEMBERSHIPS AND OFFICES HELD IN PROFESSIONAL ORGANIZATIONS

American Psychological Assn. (1978-present)

American Statistical Assn. (1979-present) Stat. Consult. Section President 1996-98, Officer 2003-05;
District 4-5 Representative to Executive Committee, Caucus of Academic Representatives 2008-2011

Biometric Society (1981-present) Regional Advisory Board 2006-2008;
Regional Executive Committee 2011-2013

Psychometric Society (1979-present)

PUBLICATIONS

Books

Kleinbaum DG, Kupper LL, Nizam A, and Muller KE (2007) *Applied Regression Analysis and Other Multivariable Methods.* 4th edition. Boston: Duxbury Press.

Muller KE and Stewart PW (2006) *Linear Model Theory; Univariate, Multivariate, and Mixed Models*. New York: Wiley.

Muller KE and Fetterman BA (2002) *Regression and ANOVA: An Integrated Approach Using SAS® Software*. Cary, NC: SAS Institute.

Invited Book Chapters

Bard DE, Rodgers JL, Muller KE (2013) A primer of epidemiologic methods, concepts, and analysis, with examples and more advanced applications within psychology. Chapter 16, in: Little TD, ed. *The Oxford Handbook of Quantitative Methods*, Vol 1, 305-331, New York: Oxford University Press, Inc.

Muller KE (2009) Analysis of Variance (ANOVA concepts and computations), *Wiley Interdisciplinary Reviews: Computational Statistics*, **1**, 271–282, http://onlinelibrary.wiley.com/doi/10.1002/wics.43/abstract.

Catellier DJ and Muller KE (2002) Sample size and power considerations in physical activity research. Chapter 6, *Physical Activity Assessments for Health-Related Research*, G.J. Welk, ed., 93-104. Champaign, IL: Human Kinetics.

Muller KE (1998) Power of a hypothesis test, entry in *The Encyclopedia of Biostatistics*, P. Armitage and T. Colton, ed., 2430-3465, London, England: Wiley UK.

O'Brien RG and Muller KE (1993) A unified approach to statistical power for t-tests to multivariate models. Chapter 8, *Applied Analysis of Variance in Behavioral Sciences*, L.K. Edwards, ed., 297-344. New York: Marcel Dekker.

Muller KE (1986) Design and analytical methods. Chapter 18, *Neurobehavioral Toxicology*, Z. Annau, ed., 404-423. Baltimore: Johns Hopkins Press.

Refereed Articles

Bold names indicate coauthors who were students during the project, and **underlined** **bold** names indicate the work originated in the student's dissertation or masters paper I chaired or co-chaired.

145 Asdigian NL, Barón AE, Morelli JG, Mokrohisky ST, Aalborg J, Dellavalle, RP, Daley MF, Berwick M, Muller KE, Box NF, and Crane LA (2018) Trajectories of nevus development from age 3 to 16 Years in the Colorado Kids Sun Care Program cohort, *JAMA Dermatology*, doi:10.1001/jamadermatol.2018.3027, PMCID: PMC6248123.

144 Huo T, Guo Y, Shenkman EA and Muller KE (2018) Assessing the reliability of the Short Form 12 (SF-12) health survey in adults with mental health conditions: a report from the Wellness Incentive and Navigation (WIN) Study, *Health and Quality of Life Outcomes*, 16, 34. http://doi.org/10.1186/s12955-018-0858-2 PMCID: PMC5811954

143 **Kreidler SM**, Ringham BA, Muller KE and Glueck DH (2018) Calculating power for the general linear multivariate model with one or more Gaussian covariates, *Communications in Statistics - Theory and Methods*, DOI: 10.1080/03610926.2018.1433849

142 Ringham BA, **Kreidler SM**, Muller KE and Glueck DH (2018) On the distribution of summary statistics for missing data, *Communications in Statistics - Theory and Methods*, DOI: 10.1080/03610926.2018.1425447

141 **Livingston MD**, Muller KE, Cannel B and Komro K (2018) Comparing methods of misclassification correction for studies of adolescent alcohol use, *American Journal of Drug and Alcohol Abuse*, 44, 160-166. PMCID: PMC5976237

140 Chi YY, Glueck DH and Muller KE (2018) Power and sample size for fixed-effects inference in reversible linear mixed models, *The American Statistician*, DOI: 10.1080/00031305.2017.1415972

139 **Zhang X**, Muller KE, Goodenow M, and Chi YY (2018) Internal pilot design for balanced repeated measures, *Statistics in Medicine*, 37, 375-389 DOI: 10.1002/sim.7524 PMCID: PMC5768471

138 Case K, Guo Y, Nixon SJ, Muller K, Huo T, Prather R, Morris H, Stoner D, Shenkman E (2017) Exploring the role of executive functioning capacity in patient activation and health outcomes among medicaid members with multiple comorbidities. *Medical Care Research and Review*, 1-18. PMID: 29148345.

137 Cardel MI, Johnson SL, Beck J, Dhurandhar E, Keita AD, Tomczik AC, Pavela G, Huo T, Janicke DM, Muller KE, Piff PK, Peters JC, Hill JO, and Allison DB (2016) The effects of experimentally manipulated social status on acute eating behavior: a randomized, crossover pilot study. *Physiological Behavior*, 162, 93-101. PMCID: PMC4899290

136 Thompson LA, **Wegman M**, Muller KE, Muszynski M, Rathore M, De Leon J, Shenkman EA and the Health IMPACTS for Florida Network (2016) Improving adolescent health risk assessment: a multi-method pilot study. *Maternal and Child Health Journal*, 20(12), 2483–2493. PMCID: PMC5124035.

135 **Ringham BA**, Kreidler SM, Muller KE and Glueck DH (2016) Multivariate test power approximations for balanced linear mixed models in studies with missing data. *Statistics in Medicine*, 35, 2921-2937. PMCID: PMC4879605

134 Shenkman E, Muller K, Vogel B, Nixon SJ, Wagenaar AC, Case K, Guo Y, **Wegman M**, Aric J and Stoner D (2015) The wellness incentives and navigation project: design and methods. *BMC Health Services Research*, 15 (579). PMCID: PMC4696169

133 <u>**Johnson JL**</u>, Kreidler SM, Catellier DJ, Murray DM, Muller KE and Glueck DH (2015) Recommendations for choosing an analysis method that controls Type I error for unbalanced cluster sample designs with Gaussian outcomes. *Statistics in Medicine*, 34, 3531-3545. PMCID: PMC5063032

132 **Wegman MP**, Herndon JB, Muller KE, Graham GN, Vogel WB, Case KH, Lee JA, Van Voorhis MF and Shenkman EA (2015) Quality of care for chronic conditions among disabled medicaid enrollees: an evaluation of a 1915 (b) and (c) waiver program. *Medical Care*, 53, 599-606. PMCID: PMC4510474

131 Logan HL, Guo Y, Emanuel AS, Shepperd JA, Dodd VJ, Marks JG, Muller KE and Riley JL III (2015) Determinants of first-time cancer examinations in a rural community: a mechanism for behavior change. *American Journal of Public Health*, 105, 1424-1431. PMCID: PMC4463403

130 Munjal A, Sakhadeo UR, Muller KE, Glueck DH and **Kreidler SM** (2014) GLIMMPSE Lite: calculating power and sample size on smartphone devices. *PLoS One*, 9(12):e102082. PMCID: PMC4277287

129 Simpson SL, Edwards LJ, Styner MA and Muller KE (2014) Separability tests for high-dimensional, low sample size multivariate repeated measures data. *Journal of Applied Statistics,* 41, 2450–2461. PMCID PMC4203479

128 Guo Y, Logan HL, Dodd VJ, Muller KE, Marks JG, Riley JL III (2014) Health literacy: a pathway to better oral health. *American Journal of Public Health*, 104(7), e85–e91. PMCID: PMC4056215

127 Andridge RR, Shoben AB, Muller KE, and Murray DM (2014) Analytic methods for individually randomized group treatment trials and group-randomized trials when subjects belong to multiple groups. *Statistics in Medicine*, 33, 2178-2190. PMCID: PMC4013262

126 **Ringham BM**, Alonzo TA, Brinton JT, Kreidler SM, Munjal A, Muller KE, and Glueck DH (2014) Reducing decision errors in the paired comparison of the diagnostic accuracy of screening tests with Gaussian outcomes. *BMC Medical Research Methodology*, 14(37). PMCID: PMC4015908

125 Park KE, Huo T, Muller KE, Aranda JM, Hill JA, and Anderson RD (2014) Drug-eluting stents may not reduce target lesion revascularization in cardiac allograft vasculopathy. *Journal of Interventional Cardiology*, 27, 80-85. PMID: 24383617; PMCID: not needed

124 Simpson SL, Edwards LJ, Styner MA, and Muller KE (2014) Kronecker product linear exponent AR(1) correlation structures for multivariate repeated measures. *PLOS One*, 9(2), e88864. PMCID: PMC3931642

123 Chi YY, Gribbin MJ, Johnson JL, and Muller KE (2014) Power calculation for overall hypothesis testing with high-dimensional commensurate outcomes. *Statistics in Medicine*, 33, 812-827. PMCID: PMC4072336

122 Cascio C, Gribbin MJ, Gouttard S, Smith RG, Jomier M, Field S, Graves M, Hazlett HC, Muller KE, Gerig G and Piven J (2013) Fractional anisotropy distributions in 2- to 6-year-old children with autism. *Journal of Intellectual Disability Research*, 57, 1037-1049. PMCID: PMC3606640

121 Logan HL, Guo Y, Dodd VJ, Muller KE, and Riley JL III (2013) The burden of chronic diseases in a rural North Florida sample. *BMC Public Health*, 13(906). PMCID: PMC3849941

120 da Silva VR, Rios-Avila L, Lamers Y, Ralat MA, Midttun Ø, Quinlivan EP, Garrett TJ, Coats B, Shankar MN, Percival SS, Chi YY, Muller KE, Ueland PM, Stacpoole PW, and Gregory JF III (2013) Metabolite profile analysis reveals functional effects of 28-day vitamin B-6 restriction on one-carbon metabolism and tryptophan catabolic pathways in healthy men and women. *Journal of Nutrition*, 143, 1719-1727. PMCID: PMC3796343

119 Guo Y, Logan HL, Glueck DH, and Muller KE (2013) Selecting a sample size for studies with repeated measures. *BMC Medical Research Methodology*, 13(100). PMCID: PMC3734029

118 Gregory JF III, Park Y, Lamers Y, Bandyopadhyay N, Chi YY, Lee K, Kim S, da Silva V, Hove N, Ranka S, Kahveci T, Muller KE, Stevens RD, Newgard CB, Stacpoole PW, and Jones DP (2013) Metabolomic analysis reveals extended metabolic consequences of marginal vitamin B-6 deficiency in healthy human subjects. *PLoS ONE*, 8(6): e63544. PMCID: PMC3679127

117 **Kreidler SM**, Muller KE, Grunwald GK, **Ringham BM**, Coker-Dukowitz ZT, Sakhadeo UR, Barón AE, and Glueck DH (2013) GLIMMPSE: online power computation for linear models with and without a baseline covariate. *Journal of Statistical Software*, 54(10). PMCID: PMC3882200

116 **Gribbin MJ**, Chi YY, Stewart PW, and Muller KE (2013) Confidence regions for repeated measures ANOVA power curves based on estimated covariance. *BMC Medical Research Methodology*, 13(57). PMCID: PMC3738257

115 Logan HL, Shepperd JA, Pomery EA, Guo Y, Muller KE, Dodd VJ, and Riley JL III (2013) Increasing screening intentions for oral and pharyngeal cancer. *Annals of Behavioral Medicine*, 46, 96-106. PMCID: PMC3706731

114 Riley JL III, Pomery E, Dodd V, Muller KE, Guo Y, and Logan HL (2013) Disparities in knowledge of mouth or throat cancer among rural Floridians. *Journal of Rural Health*, 29, 294–303. PMCID: PMC3695415

113 Chi YY and Muller KE (2013) Two step hypothesis testing when the number of variables exceeds the sample size. *Communications in Statistics - Simulation and Computation*, 42, 1113-1125. PMCID: PMC4028141

112 Kairalla JA, Coffey CS, Thomann MA, and Muller KE (2012) Adaptive trial designs: a review of barriers and opportunities. *Trials*, 13(145). PMCID: PMC3519822

111 Zhao M, Lamers Y, Ralat MA, Coats BS, Chi YY, Muller KE, Bain JR, Shankar MN, Newgard CB, Stacpoole PW, and Gregory JF (2012) Marginal vitamin B-6 deficiency decreases plasma n-3 and n-6 polyunsaturated fatty acid concentrations in health men and women. *Journal of Nutrition*, 142, 1791-1797. PMCID: PMC3442793

110 Riley JL III, Dodd VJ, Muller KE, Guo Y, and Logan HL (2012) Psychosocial factors associated with mouth or throat exams in rural Florida. *American Journal of Public Health*, 102, e7-e14. PMCID: PMC3375168

109 Chi YY, Gribbin MJ, Lamers Y, Gregory JF III, and Muller KE (2012) Global hypothesis testing for high dimensional repeated measures outcomes. *Statistics in Medicine*, 31, 724-742. PMCID: PMC3396026

108 Gurka MJ, Edwards LJ, and Muller KE (2011) Avoiding bias in mixed model inference for fixed effects. *Statistics in Medicine*, 30, 2696–2707. PMCID: PMC3396027

107 Buckler AJ, Aerts HJWL, Bendriem B, Bendtsen C, Boellaard R, Boone JM, Bresolin L, Cole PE, Conklin JJ, Dorfman GS, Douglas PS, Dunnick NR, Eidsaunet W, Elsinger C, Frank RA, Gatsonis C, Giger ML, Gustafson D, Gupta SN, Hoekstra OS, Jackson EF, Karam L, Kelloff, GJ, Kinahan PE, McLennan G, Miller CG, Mozley PD, Muller KE, Patt R, Raunig D, Rosen M, Rupani H, Schwartz LH, Siegel BA, Sorensen AG, Wahl RL, Waterton JC, Wolf W, Zahlmann G, Zimmerman B, and Sullivan DC (2011) Quantitative imaging test approval and biomarker qualification: inter-related but distinct activities. *Radiology*, 259, 875-84. PMID: 21325035; PMCID: journal in process

106 Buckler AJ, Aerts HJWL, Bendriem B, Bendtsen C, Boellaar R, Boone JM, Bresolin L, Burstein D, Cole PE, Conklin JJ, Dorfman GS, Douglas PS, Dunnick NR, Eidsaunet W, Elsinger C, Frank RA, Gatsonis C, Giger ML, Gustafson D, Gupta SN, Hoekstra OS, Jackson EF, Karam L, Kelloff GJ, Kinahan PE, McLennan G, Miller CG, Mozley PD, Muller KE, O'Donnell K, Patt R, Raunig D, Rosen M, Rupani H, Schwartz LH, Siegel BA, Sorensen AG, Wahl RL, Waterton JC, Wolf W, Zahlmann G, Zimmerman B, and Sullivan DC (2011) A collaborative enterprise for multi-stakeholder participation in the advancement of quantitative imaging. *Radiology*, 258, 906-914. PMID: 21339352; PMCID: not needed

105 **Simpson SL**, Edwards LJ, Muller KE, Sen PK, and Styner MA (2010) A linear exponent AR(1) family of correlation structures. *Statistics in Medicine*, 29, 1825–1838. PMCID: PMC4020183

104 Chi YY and Muller KE (2010) Using scientifically and statistically sufficient statistics in comparing image segmentations. *Statistics and Its Interface*, 3, 91-101. PMCID: PMC4067051

103 **Clement-Spychala ME,** Couper D, Zhu H, and Muller KE (2010) Approximating the Geisser-Greenhouse sphericity estimator and its applications to diffusion tensor imaging. *Statistics and Its Interface*, 3, 81-90. PMCID PMC4114524

102 **Kairalla JA**, Muller KE, and Coffey CS (2010) Combining an internal pilot with an interim analysis for single degree of freedom tests. *Communications in Statistics - Theory and Methods*, 39, 3717 - 3738. PMCID: PMC2965034

101 Cheng J, Edwards LJ, Maldonado-Molina MM, Komro KA, and Muller KE (2010) Real longitudinal data analysis for real people: building a good enough mixed model. *Statistics in Medicine*, 29, 504-520. PMCID: PMC2811235

100 Glueck DH, Karimpour-Fard A, Mandel J, and Muller KE (2010) Probabilities for separating sets of order statistics. *Statistics*: *A Journal of Theoretical and Applied Statistics*, 44, 145-153. PMCID: PMC3020799

99 Ahmadi A, Li Q, Muller KE, Collins D, Valentine JF, Drane W, and Polyak S (2010) Diagnostic value of noninvasive combined fluorine-18 labeled fluoro-2-deoxy-D-glucose positron emission tomography and computed tomography enterography in active Crohn's disease. *Inflammatory Bowel Disease*, 16, 974–981. PMID: 19885907; PMCID: not needed

98 Glueck DH, Lamb MM, O'Donnell CI, Ringham BM, Brinton JT, Muller KE, Lewin JM, Alonzo TA, and Pisano ED (2009) Bias in trials comparing paired continuous tests can cause researchers to choose the wrong screening modality. *BMC Medical Research Methodology*, 9(4), 1-14. PMCID: PMC2657218

97 Saxonhouse MA, Garner R, Mammel L, Li Q, Muller KE, Greywoode J, Miller C, and Sola-Visner M (2009) Closure times measured by the platelet function analyzer PFA-100® are longer in neonatal blood compared to cord blood samples. *Neonatology*, 97, 242-249. PMID: 19887853; PMCID: not needed

96 **Johnson JL**, Muller KE, **Slaughter JC**, **Gurka MJ**, **Gribbin MJ,** and **Simpson SL** (2009) POWERLIB: SAS/IML software for computing power in multivariate linear models. *Journal of Statistical Software*, 30(5), 1-27. PMCID: PMC4228969

95 **Kairalla JA**, Coffey CS, and Muller KE (2008) GLUMIP 2.0: SAS/IML software for planning internal pilots. *Journal of Statistical Software*, 28(7), 1-32, http://www.jstatsoft.org/v28/i07. PMCID:

PMC5074077

94 Edwards LJ, Muller KE, Wolfinger RD, Qaqish BF and Schabenberger O (2008) An R-square statistic for fixed effects in the linear mixed model. *Statistics in Medicine*, 27, 6137-6157. PMCID: PMC2587505

93 Glueck DH, Mandel J, Karimpour-Fard A, Hunter L, and Muller KE (2008) Exact calculations of average power for the Benjamini-Hochberg procedure. *International Journal of Biostatistics*, 4, article 11. PMCID: PMC3020656

92 Glueck DH, Karimpour-Fard A, Mandel J, Hunter L, and Muller KE (2008) Fast computation by block permanents of cumulative distribution functions of order statistics from several populations. *Communications in Statistics - Theory and Methods*, 37, 2815-2824. PMCID: PMC2768298

91 Glueck DH, Muller KE, Karimpour-Fard A, and Hunter L (2008) Expected power for the false discovery rate with independence. *Communications in Statistics - Theory and Methods*, 37, 1855-1866. PMCID: PMC2962418

90 Komro K, Maldonado-Molina M, Tobler A, Bonds J, and Muller KE (2007) Effects of home access and availability of alcohol on young adolescents' alcohol use. *Addiction*, 102, 1597-1608. PMID: 17854336; PMCID not needed

89 Ahn J, Marron JS, Muller KE, and Chi YY (2007) The high dimension, low sample size geometric representation holds under mild conditions. *Biometrika*, 94, 760-766.

88 **Gurka MJ**, Coffey CS, and Muller KE (2007) Internal pilots for a class of linear mixed models with Gaussian and compound symmetric data. *Statistics in Medicine*, 26, 4083-4099. PMCID: PMC4456690

87 Muller KE, Edwards LJ, **Simpson SL,** and Taylor DJ (2007) Statistical tests with accurate size and power for balanced linear mixed models. *Statistics in Medicine*, 26, 3639-3660.

86 Coffey CS, **Kairalla JA,** and Muller KE (2007) Practical methods for bounding type I error rates with an internal pilot design. *Communications in Statistics - Theory and Methods*, 36, 2143-2157. PMCID: PMC3867302

85 **Kim H**, **Gribbin MJ**, Muller KE, and Taylor DJ (2006) Analytic, computational, and approximate forms for ratios of noncentral and central Gaussian quadratic forms. *Journal of Computational and Graphical Statistics*, 15, 443-459. PMCID: PMC3704188

84 **Gurka MJ**, Edwards LJ, Muller KE, and Kupper LL (2006) Extending the Box-Cox transformation to the linear mixed model. *Journal of the Royal Statistical Society Series A, Statistics in Society*, 169, 255-272.

83 Kim HH, Pisano ED, Cole EB, **Jiroutek MR**, Muller KE, Zheng Y, Kuzmiak CM, and Koomen MA (2006) Comparison of specificity for calcifications in digital mammography using soft-copy display versus screen-film mammography. *American Journal of Roentgenology*, 187, 47-50.

82 Cole E, Pisano E, Zeng D, Muller KE, Aylward S, Park S, Kuzmiak C, Koomen M, Pavic D, Walsh R, Baker J, Gimenez E, and Freimanis R (2005) The effects of gray scale image processing on digital mammography interpretation performance. *Academic Radiology*, 12, 585-595.

81 Hemminger BM, Molina PL, Egan TM, Detterbeck FC, Muller KE, **Coffey CS,** and Lee JKT (2005) Assessment of realtime 3D visualization for cardiothoracic diagnostic evaluation and surgery planning. *Journal of Digital Imaging*, 18, 145-153. PMCID: PMC3046705

80 Rao M, Stough J, **Chi Y**, Muller KE, Tracton G, Pizer SM, and Chaney EL (2005) Comparison of human and automatic segmentations of kidneys from CT images. *International Journal of Radiation Oncology, Biology and Physics*, 61, 954-960.

79 Bullitt E, Ewend MG, Aylward S, Lin W, Gerig G, Joshi S, **Jung I**, Muller KE and Smith JK (2004) Abnormal vessel tortuosity as a marker of treatment response of malignant gliomas: preliminary report. *Technology in Cancer Research and Treatment*, 3, 577-584. PMCID: PMC2430601.

78 Bullitt E, Muller KE, **Jung I**, Lin W, and Aylward SR (2004) Analyzing attributes of vessel populations. *Medical Image Analysis*, 9, 39-49. PMCID: PMC2430268

77 **Greven S**, Bailer AJ, Kupper LL, Muller KE, and Craft JL (2004) A parametric model for studying organism fitness using step-stress experiments. *Biometrics*, 60, 793-799.

76 **Kistner EO** and Muller KE (2004) Exact distributions of intraclass correlation and Cronbach's alpha with Gaussian data and general covariance. *Psychometrika*, 69, 459-474. PMCID: PMC4138888

75 Pizer SM, Chen JZ, Fletcher PT, Fridman Y, Fritsch DS, Gash AG, Glotzer JM, **Jiroutek MR**, Joshi S, Lu C, Muller KE, Thall A, Tracton G,Yushkevich P and Chaney EL (2003) Deformable m-reps for 3D medical image segmentation. *International Journal of Computer Vision*, 55, 85-106. PMCID: PMC3697155

74 **Jiroutek MR**, Muller KE, Kupper LL, and Stewart PW (2003) A new method for choosing sample size for confidence interval-based inferences. *Biometrics*, 59, 580-590.

73 Coffey CS and Muller KE (2003) Properties of internal pilots with the univariate approach to repeated measures. *Statistics in Medicine*, 22, 2469-2485.

72 **Glueck DH** and Muller KE (2003) Adjusting power for a baseline covariate in a linear model. *Statistics in Medicine*, 22, 2535-2551. PMCID: PMC2755504

71 Cole EB, Pisano ED, **Kistner EO**, Muller KE, Yaffe MJ, Brown ME, Conant EF, Fajardo LL, Feig SA, Jong RA, Kopans DB, Maidment ADA, Shumak R, Staiger MJ, Williams MB, Kuzmiak CM, Freimanis RI, Lesko N, Rosen EL, Sanders E, Soo MS, Vo T, Walsh R, Williford M, and Braeuning MP (2002) Diagnostic accuracy of digital mammography in patients with dense breasts who underwent problem-solving mammography: effects of image processing and lesion type. *Radiology*, 226, 153-160.

70 Rosenthal M, State A, Lee J, Hirota G, Ackerman J, Keller K, Pisano ED, **Jiroutek MR**, Muller KE, and Fuchs H (2002) Augmented reality guidance for needle biopsies: an initial randomized, controlled trial in phantoms. *Medical Image Analysis*, 6, 313-320.

69 Phillips BL, **Jiroutek MR**, Tracton G, Elfervig M, Muller KE, and Chaney EL (2002) Thresholds for human detection of patient setup errors in digitally reconstructed portal images of prostate fields. *International Journal of Radiation Oncology, Biology, Physics*, 54, 270-277.

68 Pisano ED, Cole EB, **Kistner EO**, Muller KE, Hemminger BM, Brown ML, Johnston RE, Kuzmiak CM, Braeuning MP, Freimanis RI, Soo MS, Baker JA, and Walsh R (2002) Interpretation of digital mammograms: a comparison of speed and accuracy of soft-copy versus printed-film display. *Radiology*, 223, 483-488.

67 **Taylor DJ**, Kupper LL, and Muller KE (2002) Improved approximate confidence intervals for the mean of a log-normal random variable. *Statistics in Medicine*, 21, 1443-1459.

66 Edwards LJ, Stewart PW, Muller KE, and Helms RW (2001) Linear equality constraints in the general mixed model. *Biometrics*, 57, 1185-1190.

65 Hemminger BM, Zong S, Muller KE, **Coffey CS**, **DeLuca MC**, Johnston RE, and Pisano ED (2001) Improving the detection of simulated masses in mammograms through two different image processing techniques. *Academic Radiology*, 8, 845-855.

64 **Glueck DH** and Muller KE (2001) On the expected values of sequences of functions. *Communications in Statistics - Theory and Methods*, 30, 363-369. PMCID: PMC3864817

63 **Coffey CS** and Muller KE (2001) Controlling test size while gaining the benefits of an internal pilot design. *Biometrics*, 57, 625-631.

62 Bullitt E, Aylward S, Smith K, Mukherji S, **Jiroutek MR,** and Muller KE (2001) Symbolic description of intracerebral vessels segmented from magnetic resonance angiograms and evaluation by comparison with X-ray angiograms. *Medical Image Analysis*, 5, 157-169.

61 Muller KE (2001) Computing the confluent hypergeometric function, M(a,b,x). *Numerical Mathematics*, 90, 179-196.

60 **Coffey CS** and Muller KE (2000b) Some distributions and their implications for an internal pilot study with a univariate linear model. *Communications in Statistics - Theory and Methods*, 29, 2677-2691. PMCID: PMC3845535

59 **Coffey CS** and Muller KE (2000a) Properties of doubly-truncated gamma variables. *Communications in Statistics - Theory and Methods*, 29, 851-857. PMCID: PMC3898536

58 Pisano ED, Cole EB, **Major S**, Zong S, Hemminger BM, Muller KE, Johnston RE, Walsh R, Conant E, Fajardo LL, Feig SA, Nishikawa RM, Yaffe MJ, Williams MB, Aylward SR, Braeuning MP, McLelland R, Pizer SM, Brown ME, Rosen E, Soo MS, Williford M, Niklason LT, Maidment ADA, Vermont A, Kornguth PJ, Kopans DB, Moore RH, Chakraborty D, Jong R, Shumak R, Staiger M, and Plewes DB (2000) Radiologists' preferences for digital mammographic display. *Radiology*, 216, 820-830.

57 **Catellier DJ** and Muller KE (2000) Tests for Gaussian repeated measures with missing data in small samples. *Statistics in Medicine*, 19, 1101-1114.

56 Bullitt E, Liu A, Aylward S, **Coffey CS**, Stone J, Mukherji SK, Muller KE, and Pizer SM (1999) Registration of 3D cerebral vessels with 2D digital angiograms: clinical evaluation. *Academic Radiology*, 6, 539-546.

55 Hemminger BM, Dillon AW, Johnston RE, Muller KE, **Deluca MC**, **Coffey CS,** and Pisano ED (1999) Effect of display luminance on the feature detection rates of masses in mammograms. *Medical Physics*, 26, 2266-2272.

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53 **Coffey CS** and Muller KE (1999) Exact test size and power of a Gaussian error linear model for an internal pilot study. *Statistics in Medicine*, 18, 1199-1214.

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35 Beard DV, Hemminger BM, Perry JR, Mauro MA, Muller KE, Warshauer DM, Smith M, and Zito AJ (1993) Interpretation of CT studies: single-screen workstation versus film alternator. *Radiology*, 187, 565-569.

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32 Rosenman JG, **Roe CA**, Cromartie R, Muller KE, and Pizer SM (1992) Portal film enhancement: technique and clinical utility. *International Journal of Radiation Oncology, Biology, Physics*, 25, 333-338.

31 Muller KE, LaVange LM, Ramey SL, and Ramey CT (1992) Power calculations for general linear multivariate models including repeated measures applications. *Journal of the American Statistical Association*, 87, 1209-1226. PMCID: PMC4002049

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29 **Frey** **CM** and Muller KE (1992) Analysis methods for nonlinear models with compound-symmetric covariance. *Communications in Statistics - Theory and Methods*, 21, 1163-1182.

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27 Benignus VA, Muller KE, and **Malott CM** (1990) Dose-effects functions for carboxyhemoglobin and behavior. *Neurotoxicology and Teratology*, 12, 111-118.

26 Benignus VA, Muller KE, Smith MV, **Pieper KS,** and Prah JD (1990) Compensatory tracking in humans with elevated carboxyhemoglobin. *Neurotoxicology and Teratology*, 12, 105-110.

25 Muller KE and Barton CN (1989) Approximate power for repeated-measures ANOVA lacking sphericity. *Journal of the American Statistical Association*, 84, 549-555. Also see (1991) Correction to "Approximate power for repeated-measures ANOVA lacking sphericity." *Journal of the American Statistical Association*, 86, 255-256.

24 Harbin TJ, Benignus VA, Muller KE, and Barton CN (1988) The effects of low-level carbon monoxide exposure upon evoked cortical potentials in young and elderly men. *Neurotoxicology and Teratology*, 10, 93-100.

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22 Benignus VA, Kafer ER, Muller KE, and Case MW (1987) Absence of symptoms with carboxyhemoglobin of 16-23%. *Neurotoxicology and Teratology*, 9, 345-348.

21 Muller KE and Barton CN (1987) A nonlinear version of the Coburn, Forster, and Kane model of blood carboxyhemoglobin. *Atmospheric Environment*, 21, 1963-1967.

20 Benignus VA, Muller KE, Barton CN, and Prah JD (1987) Effect of low level carbon monoxide on compensatory tracking and event monitoring. *Neurobehavioral Toxicology and Teratology*, 9, 227-234.

19 Muller KE, Barton CN, and Benignus VA (1984) Recommendations for appropriate statistical practice in toxicologic experiments. *Neurotoxicology*, 5, 113-126.

18 Muller KE and **Peterson BL** (1984) Practical methods for computing power in testing the multivariate general linear hypothesis. *Computational Statistics and Data Analysis*, 2, 143-158.

17 Dyer RS, Muller KE, Janssen R, Barton CN, Boyes WK, and Benignus VA (1984) Neurophysiological effects of 30 day chronic exposure to toluene in rats. *Neurobehavioral Toxicology and Teratology*, 6, 363-368.

16 Muller KE, Barton CN, and Benignus VA (1984) Estimating equivalent dose functions for alternate routes of exposure. *Mathematical Biosciences*, 69, 87-101.

15 Benignus VA, Muller KE, Barton CN, and Bittikofer JA (1984) Toluene blood level following subcutaneous injection of toluene in the rat. *Environmental Research*, 33, 441-453.

14 Benignus VA, Muller KE, Graham JA, and Barton CN (1984) Toluene levels in blood and brain of rats as a function of toluene level in inspired air. *Environmental Research*, 33, 39-46.

13 Muller KE, Otto DA, and Benignus VA (1983) Design and analysis issues and strategies in psychophysiological research. *Psychophysiology*, 20, 212-218.

12 Otto DA, Benignus VA, Muller KE, Barton CN, Seiple KJ, Prah JD, and Schroeder S (1982) Effects of low to moderate lead exposure on slow cortical potentials in young children: two year follow-up study. *Neurobehavioral Toxicology and Teratology*, 4, 733-737.

11 Benignus VA and Muller KE (1982) Information flow in the brain: computer requirements (a tutorial). *Behavioral Research Methods and Instrumentation*, 14, 294-299.

10 Muller KE (1982) Understanding canonical correlation through the general linear model and principal components. *American Statistician*, 36, 342-354.

9 Wardrop JL, Anderson TH, Hively W, Hastings CN, Anderson RI, and Muller KE (1982) A framework for analyzing the inference structure of educational achievement tests. *Journal of Educational Measurement*, 19, 1-18.

8 Benignus VA, Muller KE, Barton CN, and Bittikofer JA (1981) Toluene levels in blood and brain of rats during and after respiratory exposure. *Toxicology and Applied Pharmacology*, 61, 326-334.

7 Muller KE, Christiansen DH, and Smith JC (1981) Guidelines for managing datasets, programs, and printouts in scientific research. *Computer Programs in Biomedicine*, 13, 281-288.

6 Benignus VA, Otto DA, Muller KE, and Seiple KJ (1981) Effects of age and body lead burden on CNS function in young children: II. EEG spectra. *Electroencephalography and Clinical Neurophysiology*, 52, 240-248. *With paper 5, won second place, Health Effects category, 1982 EPA Scientific and Technology Achievement Award.*

5 Otto DA, Benignus VA, Muller KE, and Barton CN (1981) Effects of age and body lead burden on CNS function in young children: I. Slow cortical potentials. *Electroencephalography and Clinical Neurophysiology*, 52, 229-239.

4 Muller KE (1981) Relationships between redundancy analysis, canonical correlation, and multivariate regression. *Psychometrika*, 46, 139-142.

3 Chaney S, Blomquist W, DeWitt P, and Muller KE (1981) Biochemical changes in humans upon exposure to NO_2 while at rest. *Archives of Environmental Health*, 36, 53-58.

2 Chaney S, Blomquist W, Muller KE, and DeWitt P (1980) Biochemical effects of sulfuric acid mist inhalation by human subjects while at rest. *Archives of Environmental Health*, 35, 270-275.

1 Chaney S, Blomquist W, Muller KE, and Goldstein G (1980) Biochemical changes in humans upon exposure to sulfuric acid aerosol and exercise. *Archives of Environmental Health*, 35, 211-216.

Invited Presentations With Published Proceedings

Bullitt E, **Jung I**, Muller KE, Gerig G, Aylward S, Joshi S, Smith K and Ewend M (2004) Determining malignancy of brain tumors by analysis of vessel shape, *Proceedings of MICCAI 2004*, *Lecture Notes in Computer Science*, 3217, 645-653, Heidelberg: Springer-Verlag.

Gerig G, Muller KE, Kistner EO, Chi YY, Chakos M, Styner M and Lieberman JA (2003) Age and treatment related local hippocampal changes in schizophrenia explained by a novel shape analysis method, *Proceedings of MICCAI 2003*, *Lecture Notes in Computer Science*, 2, 653-660, Heidelberg: Springer-Verlag.

Rosenthal MR, State A, Lee J, Hirota G, Ackerman J, Keller K, Pisano E, **Jiroutek M**, Muller KE, and Fuchs H (2001) Augmented reality guidance for needle biopsies: a randomized, controlled trial in phantoms, *Proceedings of MICCAI 2001*, *Lecture Notes in Computer Science*, 2208, 240-248, New York: Springer-Verlag.

INVITED PRESENTATIONS

59 Planning and Recognizing Reproducible Research Muller KE and Glueck DH. Grand Rounds, Department of Pathology, Immunology and Laboratory Medicine, University of Florida, 03/2018.

58 Four Statistical Guidelines for Planning Reproducible Research. Muller KE and Glueck DH. Georgetown University, Department of Biostatistics, 11/2017

57 What researchers can do to address disparities: a data analytic approach. Glueck DH (presenter), Shaw JR, Litt J, Alaimo K, Coors ME, Muller KE. Session on Racial, Ethnic, and Gender Disparities in Research: Addressing Ethical and Logistical Challenges. 8th Annual Colorado Clinical and Translational Research Ethics Conference. Denver, Colorado. 11/2017.

56 How to Plan Reproducible Research. Muller KE and Glueck DH. Bradley University, Department of Psychology. 04/2017

55 Glueck DH (presenter), Kreidler SM, Ringham BM, Munjal A, Muller KE. Selecting a valid sample size for longitudinal and multilevel studies in cancer research: software and methods. University of New Mexico Cancer Center, 04/2015.

54 Invited Webinar for the United States Department of Veterans Affairs. Glueck DH, Kreidler SM, Logan HL, Munjal A, Selecting a Valid Sample Size for Longitudinal and Multilevel Studies in Oral Behavioral Health. 10/2013 Available free online at *http://samplesizeshop.org/education/seminars/*.

Invited Hands On Workshop, *International Association of Dental Research General Session*, 03/2013, **Selecting a Valid Sample Size for Longitudinal and Multilevel Studies in Oral Behavioral Health**.

53 *Talk A.* How Do We Choose Sample Size and Power for Complex Oral Health Designs?
Logan HL (presenter), Munjal A, Ringham BM, Barón AE, Guo Y, Kreidler SM, Sakhadeo UR, Muller KE, and Glueck DH.

52 *Talk B.* Choosing Outcomes, Predictors, and a Hypothesis with Our Free, Web-based Software.
Logan HL, Munjal A (presenter), Ringham BM, Barón AE, Guo Y, Kreidler SM, Sakhadeo UR, Muller KE, and Glueck DH.

51 *Talk C.* Choosing Means, Variances, and Correlations with Our Free, Web-based Software.
Logan HL, Munjal A, Ringham BM (presenter), Barón AE, Guo Y, Kreidler SM, Sakhadeo UR, Muller KE, and Glueck DH.

50 *Talk D.* Wrapping it Up: Writing the Grant.
Logan HL, Munjal A, Ringham BM, Barón AE, Guo Y, Kreidler SM, Sakhadeo UR, Muller KE, and Glueck DH (presenter).

Invited Symposium, *Society of Behavioral Medicine Annual Meeting and Scientific Sessions*, March 2013, **Finding Power and Sample Size for Mixed Models in Study Designs with Repeated Measures and Clustering**.

49 *Talk A.* Power and Sample Size for the Most Common Hypotheses in Mixed Models.
Maldonado-Molina MM, Barón AE (presenter), Kreidler SM, Munjal A, Glueck DH, Muller KE.

48 *Talk B.* Selecting a Covariance Model for Longitudinal and Multilevel Designs.
Maldonado-Molina MM (presenter), Barón AE, Kreidler SM Munjal A, Glueck DH, Muller KE.

47 *Talk C.* Power Analysis for Mixed Models: Using Free Web-Based Power Software.
Maldonado-Molina MM, Barón AE, Kreidler SM (presenter) Munjal A, Glueck DH, Muller KE.

Invited Practical Computing Expo, *American Statistical Association Conference on Statistical Practice*, February 2013, **Mixed Model Power Analysis By Example: Using Free Web-Based Power Software**.

46 *Talk A.* Foundations of Power and Sample Size for the General Linear Mixed Model.
Munjal A, Kreidler SM, Muller KE, Guo Y, Barón AE, Sakhadeo UR, Glueck DH (presenter).

45 *Talk B.* Mixed Model Power Analysis By Example: Using Free Web-Based Power Software.
Munjal A (presenter), Kreidler SM, Muller KE, Guo Y, Barón AE, Sakhadeo UR, Glueck DH.

44 *Talk C.* Wrapping it Up: Writing the Grant.
Munjal A, Kreidler SM, Muller KE, Guo Y, Barón AE, Sakhadeo UR, Glueck DH (presenter).

Invited Skill-Building Session, *American Psychological Association Annual Meetings*, August 2012, **Finding Power and Sample Size for the Most Popular Hypotheses in Mixed Models**.

43 *Talk A.* Mixed Model Power Analysis By Example: Using Free Web-Based Power Software
Kreidler (presenter) SM, Muller KE, and Glueck DH.

42 *Talk B.* Power and Sample Size for the Most Common Hypotheses in Mixed Models
Barón AE (presenter), Kreidler SM, Glueck DH, and Muller KE.

Invited Session, *Western North American Region, International Biometrics Society*, June, 2012:
Power and Sample Size for Most of the Hypotheses You Will Ever Test in Any Mixed Model.

41 *Talk A.* Power and Sample Size for the Most Popular Hypotheses in Mixed Models
Barón AE (presenter), Kreidler SM, Glueck DH, and Muller KE.

40 *Talk B.* Mixed Model Power Analysis By Example: Using Free Web-Based Power Software
Kreidler (presenter) SM, Muller KE and Glueck DH.

39 *Talk C.* Sample Size Determination for High Dimensional Global Hypothesis Testing
Chi YY (presenter), Gribbin MJ, and Muller KE.

38 *Talk D.* Adaptive Sample Size Designs for Comparative Effectiveness Clinical Trials
Thomann (presenter) M, Kairalla JA, Coffey CS, and Muller KE.

37 Meeting the Challenge of Clustered and Multilevel Data, semi-annual meeting of the *Task Force on Design and Analysis in Oral Health Research*, May 2011.

36 Achieving Covariance Robustness for Inference in the Linear Mixed Model, *Florida Chapter Meeting, American Statistical Association*, February, 2011.

35 A good N Despite a Bad Start: a Practical Guide to Easy Internal Pilots, *Kansas Chapter Meeting, American Statistical Association*, October 2010.

34 Real Longitudinal Data Analysis for Real People: Building a Good Enough Mixed Model, *Kansas University Medical Center*, October 2010.

33 A good N Despite a Bad Start: a Practical Guide to Easy Internal Pilots, *Moffitt Cancer Center*, February 4, 2009.

32 Panel Member, Junior Investigator Workshop: Transition from Mentored Scientist to Career Independence, *American Society of Preventive Oncology* meetings, March 8, 2009.

31 Finding and Using Good Mentoring, speaker and panel member, Nineteenth Annual Special Session for Cancer Prevention Trainees and Fellows, preceding the *American Society of Preventive Oncology* meetings, March 8, 2009.

30 Coffey CS, (presenter) Gurka MJ, and Muller KE. Internal pilot designs for cluster samples, *Joint Statistical Meetings*, 2008.

29 **Johnson JL** (presenter), Muller KE, Catellier DJ, Moldanado-Molina MM, and Komro K. Power for Gaussian clustered data, *Joint Statistical Meetings*, 2008.

28 Catellier DJ (presenter), **Johnson JL**, and Muller KE. Estimation and inference for Gaussian clustered data, *Joint Statistical Meetings*, 2008.

27 (Introductory Overview Lecture) A good N despite a bad start: a practical guide to easy internal pilots, *Joint Statistical Meetings*, 2008.

26 The ugly, the bad, and the good of missing and dropout data in analysis and sample size selection. *Annual Meeting of the American Society of Primatologists*, 2008.

25 **Gurka MJ** (presenter), Coffey CS, and Muller KE. Internal pilot designs and mixed models, *Joint Statistical Meetings*, 2007.

24 Muller KE and Cheng J. Real Longitudinal data analysis for real people: building a good enough mixed model. *National Institute on Aging Workshop: Statistical Methods for Longitudinal Data on Aging*, June, 2007.

23 **Jiroutek MR** (presenter) and Muller KE. Accounting for alignment, uncertainty and bias when choosing a sample size, *Bristol-Myers Squibb Pharmaceutical Research Institute Biostatistics Forum*, 2004.

22 **Jiroutek MR** (presenter) and Muller KE. Accounting for uncertainty and bias when choosing a sample size, March, 2004: *Second Annual Connecticut ASA Statistics Mini-Conference*, 2004.

21 Muller KE and Fetterman BA. Finding the Best Univariate Linear Regression Model, *59th Annual Deming Conference on Applied Statistics*, December, 2003. Jointly sponsored by American Society of Quality Control and Biopharmaceutical Section of American Statistical Association.

20 Coffey CS (presenter) and Muller KE. Exact and approximate methods for internal pilots: beyond two group comparisons, *Biometrics Society*, 2003.

19 **Jiroutek MR** (presenter) and Muller KE. Internal pilot designs for confidence intervals with good properties, *Biometrics Society*, 2003.

18 **Coffey CS** and Muller KE. GLUMIP 1.0: Free SAS/IML®Software for planning internal pilots (invited poster), *Joint Statistical Meetings*, 2001.

17 Free SAS/IML® Power Software for Repeated Measures and MANOVA (invited poster), *Joint Statistical Meetings*, 2001.

16 Avoiding "Type III" errors, presentation for panel on Sample Size Issues, *Joint Statistical Meetings*, 2000.

15 Modeling uncertainty and bias in choosing a sample size, *Department of Epidemiology and Biometry, University of Colorado*, 2000.

14 Modeling uncertainty and bias in choosing a sample size, *Department of Statistics, University of Illinois at Urbana*, 1999.

13 Modeling uncertainty and bias in choosing a sample size, *Department of Statistics, Carnegie-Mellon*, 1998.

12 Muller KE and **Glueck DH** Approximating power of the general linear multivariate model: a status report, *Joint Statistical Meetings*, 1998.

11 Power for multivariate linear models. *Department of Statistics, North Carolina State University*, 1995.

10 Meeting the challenge of repeated measures in intervention research. *Fourth Annual Research Conference*, cosponsored by Schools of Nursing, University of Maryland at Baltimore and The Johns Hopkins University, 1993.

 9 Understanding and using power in repeated measures and related models. *Department of Psychology, Notre Dame*, 1993.

 8 Organizer, chairman, and discussant, of session on nonlinear models with repeated measures in small samples. *Joint Statistical Meetings*, 1991.

 7 Muller KE and Benignus VA. Increasing scientific power with statistical power. *Society of Behavioral Teratology and Toxicology*, 1991.

 6 Muller KE and O'Brien RG. Tutorial on power calculation for repeated measures linear models. *Association of General Clinical Research Center Statisticians*, 1991.

 5 Muller KE and LaVange LM. Sample size determination in multivariate models. *Biometric Society*, 1991.

 4 Richness for the one-way ANOVA layout. One of six invited speakers at NSF National Research Council Symposium on *The Future of Statistical Computing*, 1991. Proceedings published by NSF/NRC, 1991, as *Statistical Software*, p3-13 (disc: p23-32).

 3 Understanding and computing power for the multivariate general linear model. *Department of Biostatistics, Medical College of Virginia*, 1988.

 2 Muller KE and **Peterson BL.** Power analysis for multivariate linear models: new results and SAS make it practical. *SAS Users' Group international Meeting*, 1984.

 1 Muller KE and Otto DA. Strategies for analyzing evoked potential data. *Evoked Response Potential Satellite Workshop, Psychophysiology Society*, 1980.

CONTRIBUTED PRESENTATIONS

Each year I typically co-author 2-4 presentations at professional meetings.

Muller KE. Practical methods for multiple comparisons in MANOVA. *SAS Users' Group International*, 1983. Judged best paper in session.

Muller KE, Smith JC, and Christiansen DH. Rules we followed and wish we had followed in managing datasets, programs, and printouts. *SAS Users' Group International*, 1981. Judged best paper in session.

THESES AND DISSERTATION

The General Linear Multivariate Model for Canonical Correlation, Muller KE (1981), MS in Statistics, University of North Carolina, Chapel Hill.

A Sequential Individual Differences Model of a Complex Concept Learning Selection Task, Muller KE (1976), PhD in Quantitative Psychology, University of North Carolina, Chapel Hill.

The Regression of True Score on Obtained With Forced Choice Responding and Binomially Distributed True Scores, Muller KE (1971), MA in Psychology, Bradley University, Peoria, Illinois.

TEACHING

My teaching portfolio (available on request) contains details of my teaching philosophy, books, student course evaluations, and teaching-related activities.

I have chaired 11 dissertations, 23 master's papers, and have served on 29 other committees.

I was nominated for teaching awards in 1977, 1983, and 1986. Student evaluations have been consistently among the highest.

My current teaching centers on mentoring junior faculty. I have been a mentor on NIH funded K-awards, have served as a primary mentor for one, and have assisted with dozens of K- applications (with many successful). I have been PI of a minority supplement award.

I have taught the following courses.

UC Denver 2016 A Master Course on Power and Sample Size for Multilevel and Longitudinal Health Behavior and Social Science Studies, co-taught with course director D. H. Glueck, CLSC 6585

UF 2006-2009 Grant writing (with E. A. Shenkman leading and B. Vogel) GMS 6811

UF 2006-2010 Small group leader, presenter, Clinical and Translational Research GMS 7093

UNC-CH, 1998-2004, Advanced Linear Models, Biostatistics 262
Core course required of all Biostatistics doctoral students; tested in qualifying examinations.
I am first author of the textbook used in the class.

UNC-CH, 1987-1997, Intermediate Linear Models, Biostatistics 163
Core course required of all Biostatistics masters students; tested in qualifying examinations.
I am first author of the textbook used in the class.

UNC-CH, 1982-1986, 1988-1990, Applied Multivariate Linear Models, Biostatistics 166

UNC-CH, 1980-1982, Principles of Experimental Analysis, Biostatistics 145
I am third author of the textbook used in the class.

Univ. of Illinois, 1977, Theory of Mental Tests; Multiple Regression in Educational Research

Univ. of Illinois, 1976, Intermediate Statistics in Education; Advanced Design and ANOVA

Bradley Univ., 1971, Experimental Design and ANOVA

EXTERNAL FUNDING
Current Funding

As throughout my career, I currently generate external support for roughly 75% of my time, salaries for a number of masters level biostatisticians, a full-time software engineer and part-time students, a research coordinator, our travel, supplies, and research computing.

I am co-principal investigator (with DH Glueck and D Dabelea) of R01GM121081, "Methods and Software for Lifecourse Epidemiology Data and Sample Size Analysis" funded by NIH/NIGMS, 08/15/2016-06/30/2020, as a continuation of 1R01DE020832-01A1, approximately $500,000/year direct costs.

I am co-principal investigator (with DH Glueck) of R25GM111901, "A Master Course on Power for Multilevel and Longitudinal Health Behavior Studies," roughly $200,00/year direct costs, funded by NIH/OBSSR and NIGMS, 08/25/2014-06/30/2018.

Previous Funding

I was co-principal investigator of G13LM011879, "Guidebook to Power and Sample Size for Linear Models," roughly $50,000/year direct costs, funded by NLM/NIH, 12/01/2014-11/30/2017.

I was principal investigator for R01DE020832, "Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists," 12/09/10-11/30/15, $2,212,987, funded by NIDCR. I was a co-investigator on a 1 year methodology supplement, NCCR 3UL1RR029890-03S1 (D. Nelson PI of parent CTSA). The project developed and disseminated defensible guidelines for using adaptive sample size re-estimation methods for comparing two treatments in comparative effectiveness studies.

Since joining the University of Florida in 2006 I have led the Biostatistics components for more than $100M of external funding, including the cores for three NIH funded program grants. I was founding director of the methodolgy core for the CTSA funded CTSI. I was Head, Stat. and Data Core, SE Center for Research to Reduce Disparities in Oral Health. I was head of the Biostatistics core of an NICHD P01, Kirk Conrad, PI. I am the biostatistician for a 5 year project funded by the Centers for Medicare and Medicaid Service and the Texas HHS Commission, E.A. Shenkman, P.I.

At UNC-CH, I led the statistical effort for over $50 million in funded research and was principal investigator for approximately $4 million including R01CA095749, 1/15/2003-12/31/07 from NCI, "Internal Pilots for Repeated Measures ANOVA." I usually funded four GRAs, one undergraduate, all travel, supplies, computing, as well 80% of my salary. I was Biostatistics Core Director for more than a dozen successful center or program project grant proposals, including 2 GCRC renewals. From 1989-2006 I was Biostatistics Core Director for the Medical Imaging PO-1 with Computer Science, Radiation Oncology, Psychiatry, and Radiology. I was also Biostatistics core director for successful NICHD (MRRC) and NIMH (Conte) center grants.

NIH Funding History Details as Principal Investigator

Project	Principal Investigator	FY	Cost	IC
Project Title				
9R01GM121081-05	{Glueck, DH; Dabelea, D; Muller, KE}	2016	$654,200	NIGMS
Methods and Software for Lifecourse Epidemiology Data and Sample Size Analysis				
5R25GM111901-03	{Muller, KE; Glueck, DH}	2016	$199,299	NIGMS
A Master Course on Power for Multilevel and Longitudinal Health Behavior Studies				
5G13LM011879-03	{Muller, KE; Glueck, DH}	2016	$48,500	NLM
Power and Sample Size for Multilevel and Longitudinal Designs in Health Research				
5R25GM111901-02	{Muller, KE; Glueck, DH}	2015	$202,567	NIGMS
A Master Course on Power for Multilevel and Longitudinal Health Behavior Studies				
5G13LM011879-02	{Muller, KE; Glueck, DH}	2015	$48,016	NLM
Power and Sample Size for Multilevel and Longitudinal Designs In Health Research				

5R01DE020832-04   Muller, KE   2014 $581,720 NIDCR
  Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists
1R25GM111901-01   {Muller, KE; Glueck, DH}   2014 $207,833 NIGMS
  A Master Course on Power for Multilevel and Longitudinal Health Behavior Studies
1G13LM011879-01A1 {Muller, KE; Glueck, DH}   2014 $50,000 NLM
  Power and Sample Size for Multilevel and Longitudinal Designs In Health Research
5R01DE020832-03 Muller, KE   2013 $526,303 NIDCR
  Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists
5U54DE019261-05 Muller, KE   2012 $101,760 NIDCR
  Statistics and Data Coordinating Center
5R01DE020832-02 Muller, KE   2012 $603,100 NIDCR
  Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists
5U54DE019261-04 Muller, KE   2011 $100,024 NIDCR
  Statistics and Data Coordinating Center
3R01DE020832-01A1S1 Muller, KE   2011 $74,567 NIDCR
  Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists
1R01DE020832-01A1 Muller, KE   2011 $518,942 NIDCR
  Multilevel and Longitudinal Study Sample Size Tools for Behavioral Scientists
5U54DE019261-03 Muller, KE   2010 $98,336 NIDCR
  Statistics and Data Coordinating Center
5U54DE019261-02 Muller, KE   2009 $96,706 NIDCR
  Statistics and Data Coordinating Center
1U54DE019261-01 Muller, KE   2008 $95,118 NIDCR
  Statistics and Data Coordinating Center
5R01CA095749-02 Muller, KE   2004 $205,614   NCI
  Internal Pilots for Repeated Measure ANOVA
1R01CA095749-01A1 Muller, KE   2003 $216,324   NCI
  Internal Pilots for Repeated Measure ANOVA
3P30MH033127-22S1 Muller, KE   2001 $262,244 NIMH
  Core--Data Management /Biostatistics
5P01CA047982-11 Muller, KE   2000 $247,768 NCI
  Core--Biostatistics Facility
5P30MH033127-22 Muller, KE   2000 $20,7811 NIMH
  Core--Data Management /Biostatistics
5P01CA047982-10 Muller, KE   1999 $247,768 NCI
  Core--Biostatistics Facility
5P30MH033127-21 Muller, KE   1999 $ 207,811 NIMH
  Core--Data Management /Biostatistics
2P01CA047982-09A2 Muller, KE   1998 $243,210 NCI
  Core--Biostatistics Facility
2P30MH033127-19 Muller, KE   1997 $215,804 NIMH
  Core--Data Management /Biostatistics

SERVICE
To the Profession

July 2017-June 2023 NIH, Biostatistical Methods and Research Design (BMRD) Study Section

2019 NCCIH Protocol Review Committee

2015-2018 NIH, NCI CCDRC Steering Committee

2010-2018 NIH, NHLBI AsthmaNet Data and Safety Monitoring Board

2011-2014 ENAR/Biometric Society Regional Advisory Committee

2008-2011 District 4,5 Rep. Executive Comm., Caucus of Academic Reps.

2006-2008 ENAR/Biometric Society Regional Advisory Board

2005-2007 Regional Advisory Board Biometric Society

2002-2005 Council of Section Representative for ASA Statistical Consulting Section

2000- occasional consultant to SAS Institute on power software

1998 Executive Committee of ASA Section on Statistical Consulting

1997 Chairman of ASA Section on Statistical Consulting

1996 Executive Committee of ASA Section on Statistical Consulting

1993 External Reviewer, Notre Dame Social Sciences Training and Research Laboratory

1986 Member proposal review panel NIEHS, Statistics division

1985 Invited participant Collaborative Behavioral Teratology Workshop, sponsored by NCTR, EPA, FDA, NIOSH, NIEHS

1985 Invited participant International Conference on Neurobehavioral Effects of Solvents, sponsored by Society of Neurotoxicology

1985 Consultant, and invited seminar to FDA Food Safety Statistics Division, "Statistical Methods for Neurobehavioral Toxicology"

1984 NIEHS promotion review panel

1982 Member proposal review panel NIEHS

1981 National Center for Toxicological Research request for proposals development panel

As a Reviewer

I review for a variety of statistical and medical journals (the latter primarily in imaging).

I occassionally serve as a reviewer for NIH grant proposals.

I provide external reviews for tenure and promotion 2-3 times per year for a variety of universities.

As an Editor

Member editorial Board, *Neurotoxicology*, 1982-1992.

Associate General Editor, *Journal of the American Statistical Association*, 1989-1993.

PROFESSIONAL SERVICE AT THE UNIVERSITY OF FLORIDA

2018-- HOBI representative to COM Faculty Development Committee

2011-- HOP (now HOBI) representative to COM Research Leadership Meetings

2011--2012 HSC IT Committee

2010 Member CTSI Metabolomics Center Proposal Committee

2010 Member CTSI Imaging Center Proposal Committee

2008- Member Biomedical Informatics Academic Planning Committee and Steering Committee

2007 Imaging faculty search committee

2007 Associate Vice President for Research search committee

2007-2011 APCCI steering committee

2007 Expert witness for the Committee on a Civil, Safe, and Open Environment

2007 Founding member of the HSC Working Group on Faculty Development

2007- Member CTSI steering committee, Head of Biostatistics Core

2006 Member ad hoc Tenure Committee, College of Fine Arts (one faculty reviewed)

2006- CFAR steering committee

2006-2010 Director of the Division of Biostatistics COM/EHPR

2006-2009 Head of the Biostatistics Consulting Laboratory (used by scientists throughout UF)

2006-2008 Interim Co-director with E.A. Shenkman of the Research Data Coordinating Center now CTRIP.

PROFESSIONAL SERVICE WITHIN UNC CHAPEL HILL
To the University

2003-2006 Member UNC Committee on the Status of Women

2002 Invited (prerelease) reviewer for Associate Provost's report on faculty salary equity. Member of School of Medicine ad hoc Salary Equity Committee.

1998 Search committee for the General Clinical Research Center Director. Invited lectures to research fellows in Psychiatry, and class in Biomedical Engineering.

1997 Rescued contract between the State of NC and UNC concerning Mammography Quality Control. Before I joined, the project was at risk of termination. US CDC review one year later described it as a model for the rest of the nation. Invited lecture on power analysis for Obstetrics/Gynecology.

1993 Lectures for General Clinical Research Center Research Course (roughly 50 students).

1992 UNC Advisory Committee for Information Technology. Chairman, Subcommittee on Information Technology Staff Remuneration. Lectures for General Clinical Research Center Research Course (roughly 50 students).

1991 UNC Advisory Committee for Information Technology. Health Affairs Computing Committee. SPH Computing Committee. First author of the Biostatistics Information Technology Report, which was reviewed by the SPH Strategic Planning Committee as a possible model for the school. UNC Faculty advisor for Phi Mu sorority.

1990 UNC Information Technology Advisory Committee. Associate Provost Search Committee. Psychometric Laboratory self study and search committee (two tasks, one group). Health Affairs Computing Committee. SOM/UNC Tumor Registry Committee.

1989 Health Affairs Computing Committee.

To the UNC School of Public Health

2006 SPH Student Services review committee

2001, 2002, 2004, 2005 Mentor for Grant Writing Workshop for junior faculty

1998-present SPH Dean's Research Council

1997-1998 Invited lectures on power for Maternal and Child Health and Epidemiology classes.

1988-1990 SPH Institutional Review Board for Research

1987 SPH Greenberg Prize Committee

To the UNC Department of Biostatistics

I led the creation of the Computer Recharge Center for Biostatistics, a key element for funding information technology. Dr. P. Stewart and A. Hamner were "coauthors."

I arranged for a number of gifts of computer equipment and software to the department.

I was a regular contributor and grader for all written examinations.

2005 Committees: Chair, Search Committee for 2 tenure track faculty, BIOS Info Tech, Grad Studies, Examinations. Organizer, Biostatistics Golf Tournament. Mentored junior faculty, especially concerning grantsmanship.

2004 Committees: BIOS Info Tech, Grad Studies, Examinations. Organizer, Biostatistics Golf Tournament. Mentored junior faculty, especially concerning grantsmanship.

2003 Committees: BIOS Info Tech, Grad Studies, Examinations. Organizer, Biostatistics Golf Tournament. Mentored junior faculty, especially concerning grantsmanship. Mentored junior faculty, especially concerning grantsmanship.

2002 Committees: BIOS Info Tech, Grad Studies, Examinations. Organizer, Biostatistics Golf Tournament. Mentored junior faculty, especially concerning grantsmanship. Mentored Amy Herring in Teaching BIOS 163. Mentored other junior faculty.

2001 Committees: BIOS Info Tech, Grad Studies. Mentored David Couper teaching BIOS 163. Organized, with Danyu Lin, grant writing discussion with Biostatistics junior faculty.

2000 Committees: BIOS Info Tech, Linear Models, Faculty Search. Retreat session leader. Led recruitment of Professor Robert Hamer to Biostatistics and Psychiatry. Mentored Gail Tudor teaching BIOS 163. Mentor to two other junior faculty.

1999 Committees: BIOS Info Tech, Faculty Search. Mentored Elaine Hoffman teaching BIOS 163. Mentor to a second junior faculty.

1998 Committees: BSPH Admissions, Chairman BIOS Info Tech, Chairman Faculty Search, Chairman Strategic Planning. Mentor to two junior faculty.

1997 Committees: BIOS Info Tech, BSPH Admissions, Chairman Faculty Search.

1996 Committees: BIOS Info Tech, BSPH Admissions.

1995 Committees: BIOS Info Tech, BSPH Admissions, Faculty Search.

1994 Committees: BIOS Info Tech, BSPH Admissions, Chairman Faculty Search.

1993 Committees: BIOS Info Tech, BSPH Admissions, Chairman Strategic Planning, Chairman Faculty Search.

1992 Committees: BSPH Admissions, Chairman BIOS Info Tech, Chairman Strategic Planning.

1991 Committees: BSPH Admissions, Graduate Admissions, Strategic Planning, Alumni Survey Subcommittee, Chairman BIOS Info Tech, assisted Dept. Chairman at SPH presentation.

1990 Committees: Graduate Admissions, BSPH Admissions, Strategic Planning,

1989 Committees: Graduate Admissions, BSPH Admissions, Minority Program, Strategic Planning, Statistical Computing and Data Management.

1988 Committees: Graduate Admissions, BSPH Admissions, Minority Program, Strategic Planning, Statistical Computing and Data Management (temporary member).

1987 Committees: Graduate Admissions, BSPH Admissions, Policy Advisory, Consulting Lab.

1986 Committees: BSPH Admissions, Field Training, Consulting Lab. Coauthor with R. Helms of curriculum proposal as input to departmental retreat.

1985 Committees: Field Training, BSPH Admissions.

1984 Committees: Field Training, BSPH Admissions and Linear Models.

1983 Committees: Field Training, BSPH Admissions, Microcomputers, Chairman Seminars.

1982 Committees: Field Training, Service Courses.

1980-1981 Committees: Field Training.

1979 Committees: Linear Models.