James W. Neill
(Summary CV)

Professor Emeritus
Department of Statistics
Kansas State University

EDUCATION:

Ph.D. in Statistics, Kansas State University, 1982.

M.S. in Applied Mathematics, University of Missouri-Rolla, 1973.

B.S. in Mathematics, Eastern Illinois University, 1971.

EXPERIENCE:

Assistant Professor (1986), Associate Professor (1990), Professor (2008), Department of Statistics, Kansas State University. 1986-2020. Professor Emeritus 2020-present. Department Head 2008-2013. Interim Department Head 2017-2018.

Clinical Biostatistician, The Upjohn Company. 1985-1986.

Assistant Professor, Department of Mathematics and Statistics, Texas Tech University. 1982-1985.

Computer Programmer, Mathematics and Physics Group, Westinghouse Electric Corporation-Bettis Atomic Power Laboratory. 1973-1976.

PROFESSIONAL ASSOCIATIONS AND HONORARIES:

American Statistical Association, Institute of Mathematical Statistics, Mathematical Association of America, Sigma Xi Scientific Research Society, Phi Kappa Phi National Honor Society, Kappa Mu Epsilon Honorary Mathematical Fraternity.

RESEARCH INTERESTS:

Model adequacy tests for linear and nonlinear parametric regression models; clustering on graphs with applications to accommodate the development of statistical tests under nonstandard conditions for univariate and multiresponse models.

SELECTED PUBLICATIONS and TECHNICAL REPORTS:

Neill, J.W. and Johnson, D.E. (1984). "Testing for Lack of Fit in Regression-A Review," *Communications in Statistics,* A13, 485-511.

Scariano, S.M., Neill, J.W. and Davenport, J.M. (1984). "Testing Regression Function Adequacy With Correlation and Without Replication," *Communications in Statistics,* A13, 1227-1237.

Neill, J.W. and Johnson, D.E. (1985). "Testing Linear Regression Function Adequacy Without Replication," *The Annals of Statistics,* 13, 1482-1489.

Neill, J.W. (1988). "Testing for Lack of Fit in Nonlinear Regression," *The Annals of Statistics,* 16, 733-740.

Hsu, C.H., Levy, M.S. and Neill, J.W. (1988). "The Distribution of the Ratio of Independent Central Wishart Determinants," *Communications in Statistics,* A17, 3177-3190.

Levy, M.S. and Neill, J.W. (1988). "Testing for Lack of Fit in Linear Multiresponse Models Based on Exact or Near Replicates," *Technical Report: Department of Quantitative Analysis and Information Systems, University of Cincinnati.*

Neill, J.W. and Johnson, D.E. (1989). "A Comparison of Some Lack of Fit Tests Based on Near Replicates," *Communications in Statistics,* A18, 3533-3570.

Neill, J.W. and Yang, S.S. (1990). "Testing Regression Function Adequacy in Nonlinear Multiresponse Models," *Statistics and Probability Letters,* 9, 101-105.

Levy, M.S. and Neill, J.W. (1990). "Testing for Lack of Fit in Linear Multireponse Models Based on Exact or Near Replicates," *Communications in Statistics,* A19, 1987-2002.

Gan, G. and Neill, J.W. (1994). "Convergence Criteria for Maxima with Regularly Varying Normalizing Constants," *Statistics and Probability Letters,* 20, 23-26.

Gan, G. and Neill, J.W. (1996). "Exact Inversion Formulae with Applications to Type I Censored Sampling," *Technical Report:Department of Mathematics and Statistics, University of Missouri-Rolla.*

Miller, F.R., Neill, J.W. and Sherfey, B.W. (1998). "Maximin Clusters for Near Replicate Regression Lack of Fit Tests," *The Annals of Statistics,* 26, 1411-1433.

Miller, F.R., Neill, J.W. and Sherfey, B.W. (1999). "Implementation of a Maximin Power Clustering Criterion to Select Near Replicates for Regression Lack of Fit Tests," *Journal of the American Statistical Association,* 94, 610-620.

Neill, J.W., Miller, F.R. and Brown, D.D. (2000). "Maximin Clusters for Near Replicate Multiresponse Lack of Fit Tests," *Technical Report:Department of Statistics, Kansas State University.*

Neill, J.W., Miller, F.R. and Brown, D.D. (2002). "Maximin Clusters for Nonreplicated Multiresponse Lack of Fit Tests," *Journal of Statistical Planning and Inference,* 102, 359-375.

Neill, J.W. and Miller, F.R. (2003). "Limit Experiments, Lack of Fit Tests and Fuzzy Clusterings," *Technical Report:Department of Statistics, Kansas State University.*

Miller, F.R. and Neill, J.W. (2008). "General Lack of Fit Tests Based on Families of Groupings," *Journal of Statistical Planning and Inference,* 138, 2433-2449.

Wang, H., Neill, J.W. and Miller, F.R. (2008). "Nonparametric Clustering of Functional Data," *Statistics and Its Interface,* 1, 47-62.

Miller, F.R. and Neill, J.W. (2016). "Lack of Fit Tests for Linear Regression Models with Many Predictor Variables Using Minimal Weighted Maximal Matchings," *Journal of Multivariate Analysis,* 150, 14-26.

CURRENT RESEARCH:

Miller, F.R. and Neill, J.W. "Lack of Fit Tests for Heteroscedastic Linear Regression with Many Predictor Variables," (generalizes the 2016 JMVA paper with the development of general model adequacy tests based on a threshold matching coalescent clustering algorithm to accommodate heteroscedasticity with higher dimensional predictors).

Miller, F.R. and Neill, J.W. "A Note on Applications of Parallel Vector Fields on Infinite Dimensional Manifolds to Statistical Inference," (includes applications of parallel vector fields and their flows on a Banach manifold of probability densities to Bayesian statistics, conditional densities, ancillary events and model adequacy tests, thereby giving a geometric perspective to certain familiar results in these various areas; this work relies on Amari (1985) and Pistone and Sempi (1995)).

COURSES TAUGHT AT KANSAS STATE UNIVERSITY:

STAT 995 & 996 - Advanced Inference I & II; STAT 990 & 991 - Probability Theory I & II; STAT 980 - Probability and Asymptotics; STAT 950 - Advanced Studies in Probability and Statistics (Spatial Statistics); STAT 860 & 861 - Linear Models I & II; STAT 850 & 851 - Stochastic Processes I & II; STAT 842 - Probability for Statistical Inference; STAT 839 & 840 - Theory of Statistics III & IV; STAT 799 - Topics in Statistics (Modelling Extremal Events); STAT 799 - Topics in Statistics (Elements of Statistical Learning: Data Mining, Inference and Prediction); STAT 770 & 771 - Theory of Statistics I & II; STAT 730 - Multivariate Statistical Methods; STAT 722 - Response Surface Methodology; STAT 717 - Categorical Data Analysis; STAT 713 - Applied Linear Statistical Models; STAT 705 - Regression and Correlation Analysis; STAT 704 - Analysis of Variance and Covariance; STAT 703 - Statistical Methods for Natural Sciences; STAT 702 - Statistical Methods for Social Sciences; STAT 510 - Introductory Probability and Statistics for Engineering and the Sciences; STAT 490 - Statistics for Engineers

UNIVERSITY AND DEPARTMENTAL SERVICE:

Mathematics and Engineering area representative to the university Graduate Council, Academic Affairs Subcommittee of the Graduate Council, University General Grievance Board, Director of Graduate Studies, Graduate Certificate in Applied Statistics Director, Prelim exam committee, Qualifier exam committee, Graduate curriculum committee, Undergraduate curriculum committee, Search committees for faculty positions, Search committees for department head, Department library liaison, Scholarship awards committee, Graduate student progress committee, Assessment of Ph.D. student learning plan and outcomes, Graduate program self-assessment committee, Assessment committee for the Graduate Certificate in Applied Statistics.

EDITORIAL SERVICE:

Editorial referee for *The Annals of Statistics*, *Journal of the American Statistical Association*, *Mathematical Reviews*, *The American Statistician*, *Communications in Statistics*, *Journal of Statistical Planning and Inference*, *Journal of Mathematics and Statistics*, *Technometrics*, *Journal of Combinatorics, Information and System Sciences*, *Soil Science Society of America Journal*, *Agronomy Journal*, *Psychometrika*, *Proceedings of the Kansas State University Conference on Applied Statistics in Agriculture.*

Proposal reviewer for National Science Foundation, Kansas Agricultural Experiment Station.

Book reviewer for Springer-Verlag, John Wiley and Sons, Prentice-Hall.