

**Chauncey Mitchell Dayton**  
**Department of Measurement, Statistics & Evaluation**  
**University of Maryland College Park, MD 20742**  
**E-Mail: cdayton@umd.edu**

**EDUCATION**

- University of Chicago      A.B.1955      Major: Liberal Arts
- University of Maryland      M.A.1963      Major: Psychology
- University of Maryland      Ph.D.1964      Major: Measurement & Statistics  
Minor: Psychology

**EXPERIENCE IN HIGHER EDUCATION**

- Member, University of Arizona Oscher Lifelong Learning Institute Green Valley Council, 2012-Present
- Professor Emeritus of Measurement & Statistics, University of Maryland, 2009-Present
- Chair, Measurement & Statistics, University of Maryland, Spring Semester, 2004-2008
- Acting Chair, Measurement & Statistics, University of Maryland, Spring Semester, 1999
- Co-Director, Center for Assessment in Higher Education (CAHE), 2004-2006
- Affiliate Appointment: Professor in Joint Program in Survey Methodology, 1995-2000
- Professor of Measurement & Statistics, University of Maryland, 1971-2008
- Associate Professor of Measurement & Statistics, University of Maryland, 1967-71
- Assistant Professor of Measurement & Statistics, University of Maryland, 1964-67
- Instructor in Education, University of Maryland, 1963-64
- NDEA Fellow, University of Maryland, 1960-63

Member

**PROFESSIONAL SOCIETY MEMBERSHIPS**

American Statistical Association  
American Educational Research Association

**PUBLICATIONS: BOOKS**

- Dayton, C. M. *Latent Class Scaling Analysis*, Sage Publications, 1999
- Dayton, C. M. & Stunkard, C. L. *Statistics For Problem Solving*, New York: McGraw-Hill Book Co., 1971
- Dayton, C. M. *Design of Educational Experiments*, New York: McGraw-Hill Book Co., 1970. {Listed in the Education Book List, published by Pi Lambda Theta, as 1 of the 23 outstanding education books published in the academic year 1970-71 }

## PUBLICATIONS: JOURNALS/CHAPTERS

- Pan, X. & Dayton, C.M. Factors influencing the mixture index of model fit in contingency tables showing independence. *Journal of Modern Applied Statistical Methods*. 10, 1, May, 2011.
- Zhang, D. & Dayton, C.M. PI-LCA: A SAS Program Computing the Two-Point Mixture Index of Fit for Two-class LCA Models with Dichotomous Variables (SAS). *Journal of Modern Applied Statistical Methods*. 9, 314-331, May, 2010
- Marc H. Kroopnick, M.H., Chen, J., Choi, J., C.M. Dayton, Assessing Classification Bias in Latent Class Analysis: Comparing Resubstitution and Leave-Out Methods. *Journal of Modern Applied Statistical Methods*. 9, 52-63, May, 2010
- Samuelsen, K., & Dayton, C. M.. Latent class analysis. In G. Hancock & R. Mueller (Eds.) *Quantitative Methods in the Social and Behavioral Sciences: A Guide for Researchers and Reviewers*. Mahwah, NJ: Erlbaum, 2010
- Bao, H, Dayton, C.M. & Hendrickson, A.B. Differential Item Functioning Amplification and Cancellation in a Reading Test. *Practical Assessment, Research & Evaluation*, 14, Number 20, October 2009
- Dayton, C. M. Introduction to Latent Class Analysis. In Menard, S. (Ed.) *Handbook of Longitudinal Research: Design, Measurement & Analysis*, Elsevier, 2008.
- Dayton, C.M. Applications and extensions of the two-point mixture index of model fit. In G. Hancock & K. Samuelsen (Eds.) *Advances in Latent Variable Mixture models*. Information Age Publishing, 2007
- Dayton, C. M. & Macready, G. B. "Latent Class Analysis in Psychometrics." In Rao, C.R. & Sinharay, S. (Eds) *Handbook of Statistics, Volume 26*, 421-446, 2007
- Dayton, C. M. "Latent class analysis of attitudes toward abortion." Sawilowsky, S. (Ed.) *Real Data Analysis*, Information Age Publishing, 293-298, 2006
- Dayton, C.M. & Pan, X. PCIC\_SAS: Best subsets using information criteria. *Journal of Modern Applied Statistical Methods*. 4, 621-626, Nov, 2005.
- Pan, X. & Dayton, C.M. Sample size selection for pair-wise comparisons using information criteria. *Journal of Modern Applied Statistical Methods*. 4, 601-608, Nov, 2005.
- Dayton, C. M. "Controlling Nuisance Variables" in Everitt, B. & Howell, D. (Eds.), *Encyclopedia of Statistics in Behavioral Science*, (pp 1141-1142), Wiley, 2005.
- Dayton, C. M. Model comparisons using information measures. *Journal of Modern Applied Statistical Methods*. 2, 281-292, 2003.
- Dayton, C. M. Applications and computational strategies for the two-point mixture index of fit. *British Journal of Mathematical & Statistical Psychology*, 56, 1-13, 2003.
- Dayton, C. M. Information criteria for pairwise comparisons. *Psychological Methods*, 8, 61-71, 2003.
- DeAyala, R. J. Kim, S-H., Stapleton, L. M. & Dayton, C. M. Differential item functioning: A mixture distribution conceptualization. *International Journal of Testing*, 2, 243-276, 2003.
- Patterson, B., Dayton, C. M. & Graubard, B. Latent class analysis of complex survey data: application to dietary data. *Journal of the American Statistical Association*, 97, 721-729, 2002.
- Gagne, P. & Dayton, C. M. Best Regression Model using Information Criteria. *Journal of Modern Applied Statistical Methods*, 1, 479-488, 2002
- Dayton, C. M. & Macready, G. B. "Use of Categorical and Continuous Covariates in Latent Class Analysis." in *Advances in Latent Class Modeling*, Allan McCutcheon and Jacques Hagenaars (Eds.), Cambridge University Press, 2002.

- Dayton, C. M. SUBSET: Best subsets using information criteria. *Journal of Statistical Software*, Vol. 06, Issue 02, April, 2001.
- Ely, E. A., Chadburn, A., Dayton, C. M., Cesarman, E. & Knowles, D.M. Telomerase activity in B-Cell Non-Hodgkin Lymphomas. *Cancer*, 89, 445-452, 2000.
- DeAyala, R. J. & Dayton, C. M. YeolCA2: A program for performing latent class analysis. *Applied Psychological Measurement*, 24, 266, 2000.
- Dayton, C. M. A two-stage estimation strategy for concomitant-variable latent class models {Abstract}. *Methods of Psychological Research – Online*, Vol. 4, No. 1, 1999.
- Dayton, C. M. "Information Criteria for the Paired-Comparisons Problem." *American Statistician*, 52, 144151, 1998.
- Scheers, N. J., Dayton, C. M. & Kemp, J. S. "Sudden infant death with airways covered: case-comparison study of 206 deaths in the United States." *Archives of Pediatrics & Adolescent Medicine*, 152: 540547, June 1998.
- Lin, T. S. & Dayton, C. M. Model-selection information criteria for non-nested latent class models. *Journal of Educational and Behavioral Statistics*, 1997, 22, 249-264.
- Dayton, C. M. & Scheers, N. J. "Latent Class Analysis of Survey Data Dealing with Academic Dishonesty." Chapter in Rost, J. & Langeheine, R. (Eds) *Application of Latent Trait and Latent Class Models in the Social Sciences*, Münster, New York: Waxmann, 1997.
- Gift, H. C., Atchison, K. A. & Dayton, C. M. Conceptualizing oral health and oral health-related quality of life. *Social Science and Medicine*, 1997, 44, 601-608.
- Kolb, R. & Dayton, C. M. Correcting for nonresponse in latent class analysis. *Multivariate Behavioral Research*, 1996, 31, 7-32.
- Huang, Chuen-Chuen & Dayton, C. M. Detecting patterns of bivariate mean vectors using model-selection criteria. *British Journal of Math. & Stat. Psychology*, 1995, 48, 129-147.
- Macready, G. B. & Dayton, C. M. "Latent class models for longitudinal assessment of trait acquisition." In A. von Eye & C. C. Clogg, (Eds.) *Latent Variables Analysis: Applications for Developmental Research*, Sage, 1994.
- Macready, G. B. & Dayton, C. M. The application of latent class models in adaptive testing. *Psychometrika*, 1992, 57, 71-88.
- Dayton, C. M. Educational applications of latent class analysis. *Measurement and Evaluation in Counseling and Development*, 1991, 24, 131-141.
- Saracho, O. N. & Dayton, C. M. Age-related changes in reading attitudes. *Journal of Research in Reading*, 1991, 14, 33-45.
- Dayton, C. M. "Evaluating student performance in applied statistics courses which emphasize data analysis" in David Vere-Jones (Ed.) *Proceedings of the Third International Conference on Teaching Statistics*, Voorburg, The Netherlands: ISI Publications, 1991.
- Saracho, O. N. & Dayton, C. M. A factor analytic study of reading attitudes in young children. *Contemporary Educational Psychology*, 1989, 14, 12-21.
- Dayton, C. M. & Macready, G. B. Concomitant-variable latent class models. *Journal of the American Statistical Association*, 1988, 83, 173-178.
- Scheers, N. J. & Dayton, C. M. Covariate randomized response models. *Journal of the American Statistical Association*, 1988, 83, 969-974.
- Dayton, C. M. & Macready, G. B. "A latent class covariate model with applications to criterion-referenced testing." in R. Langeheine & J. Rost, *Latent Class and Latent Trait Models*, New York: Plenum, 1988.

- Higazi, S. M. F. & Dayton, C. M. Tables for a multivariate extension of the Dunnett test for unbalanced designs. *Communications in Statistics Simula. Computa.*, 1988, 17, 85-101.
- Dayton, C. M. & Macready, G. B. MODMULT & MODBIN: Microcomputer programs for concomitant variable latent class models. *American Statistician*, 1987, 41, 238.
- Scheers, N. J. & Dayton, C. M. Improved estimation of academic cheating behavior using the randomized response technique. *Research in Higher Education*, 1987, 26, 61-69.
- Scheers, N. J. & Dayton, C. M. RRCOV: Computer program for covariate randomized response models. *American Statistician*, 1986, 40, 229.
- Dayton, C. M. Research principles for non-experimental settings. Review of PLANNING AND ANALYSIS OF OBSERVATIONAL STUDIES by W. G. Cochran, *Contemporary Psychology*, 1984, 29 (12), #971.
- Higazi, S. M. F. & Dayton, C. M. Comparing several experimental groups with a control in the multivariate case. *Communications in Statistics Simula. Computa.*, 1984, 13(2), 227-241.
- Dayton, C. M. & Macready G. B. Latent structure analysis of repeated classifications with dichotomous data. *British Journal of Math. & Stat. Psychology*, 1983, 36, 189-210.
- Schafer, W. D. & Dayton, C. M. Integrating computer packages and statistics instruction. Proceedings of NECC/5 National Educational Computing Conference, 1983. IEEE Computing Society Press, pages 336-41, 1983.
- Schafer, W. D. & Dayton, C. M. Techniques for simultaneous inference. *The Personnel & Guidance Journal*, 1981, 59, 631-636.
- Higazi, S. M. F. & Dayton, C. M. A multivariate extension of the Tukey test. *Proceedings of the American Statistical Association, Social Science Section*, 1981.
- Dayton, C. M. & Macready, G. B. A scaling model with response errors and intrinsically unscalable respondents. *Psychometrika*, 1980, 45, 343-356.
- Macready, G. B. & Dayton, C. M. A two-stage conditional estimation procedure for unrestricted latent class models. *Journal of Educational Statistics*, 1980, 5, 129-156.
- Price, L. C., Dayton, C. M., & Macready, G. B. Probabilistic algorithms for discovering hierarchical relations. *Psychometrika*, 1980, 45, 449-465.
- Macready, G. B. & Dayton, C. M. The nature and use of state mastery models. *Applied Psychological Measurement*, 1980, 4, 493-516.
- Saracho, O. & Dayton, C. M. Relationship of teachers' cognitive styles to pupil academic achievement gains. *Journal of Educational Psychology*, 1980, 72, 544-549.
- Whitehouse, D., Dayton, C. M., & Eliot, J. A left-right identification scale for clinical use. *Developmental & Behavioral Pediatrics*, 1980, 1, 118-121.
- Dayton, C. M. Book Review: Multivariate Analysis, Finn, J. D. and Mattsson, I. *Educational Researcher*, May 1980, 22-23.
- Eliot, J., Lovell, K., Dayton, C. M., & McGrady, B. F. A further study of children's understanding of recursive thinking. *Journal of Experimental Child Psychology*, 1979, 28, 149-157.
- Fralley, J. S., Eliot, J., & Dayton, C. M. A further study of the X-linked recessive gene hypothesis for the inheritance of spatial abilities. *Perceptual & Motor Skills*, 1978, 47, 1023-1029.
- Macready, G. B. & Dayton, C. M. A multi-step conditional estimation procedure for unrestricted latent class models. *Proceedings of the American Statistical Association, Social Science section*, 1978.

- Dayton, C. M. & Macready, G. B. MODEL3G and MODEL5: Programs for analysis of dichotomous, hierarchic structures. *Applied Psychological Measurement*, 1977, 1, 412.
- Macready, G. B. & Dayton, C. M. Use of probabilistic models in the assessment of mastery. *Journal of Educational Statistics*, 1977, 2, 99-120.
- Dayton, C. M. & Macready, G. B. A probabilistic model for validation of behavioral hierarchies. *Psychometrika*, 1976, 41, 189-204.
- Eliot, J. & Dayton, C. M. Egocentric error and the construct of egocentrism. *Journal of Genetic Psychology*, 1976, 128, 275-289.
- Eliot, J. & Dayton, C. M. Factors affecting accuracy of perception on a task requiring the ability to identify viewpoints. *Journal of Genetic Psychology*, 1976, 128, 201-214.
- Gantt, W. N., Wilson, R. M., & Dayton, C. M. The relationship between syntactical divergency and the listening comprehension of black children. *Reading Research Quarterly*, 1974-75, 10, 193-208.
- Dayton, C. M., Schafer, W. D., & Rogers, B. G. On appropriate uses and interpretations of power analysis: a comment. *American Educational Research Journal*, 1973, 10, 231-234.
- Dayton, C. M. & Schafer, W. D. Extended tables of t and chi-square for Bonferroni tests with unequal error allocation. *Journal of the American Statistical Association*, 1973, 68, 78-83.
- Dayton, C. M. A method for constructing data which illustrate a suppressor variable. *American Statistician*, 1972, 26, 36.
- Seidman, E., Peterson, M., Byrne, R. H., Dayton, C. M. & Boek, J. The Child Development Consultant: an experiment. *Personnel & Guidance Journal*, 1970, 49, 29-34.
- Seidman, E., Dayton, C. M., & Peterson, M. An interdisciplinary study of pupil personnel services. *The New Era*, 1969, 50, 204-206.
- Herman, W. L., Potterfield, J. E., Dayton, C. M., & Amershek, K. G. The relationship of teacher-centered activities and pupil-centered activities to pupil achievement and interest in 18 fifth grade social studies classes. *American Educational Research Journal*, 1969, 6, 227-233.
- Uhl, N. P. & Dayton, C. M. The prediction of high school academic performance using vocational inventory scores. *Journal of Educational Measurement*, 1968, 5, 129-139.
- Dayton, C. M. Implications for educational research of the phenomenon of experimenter bias. *Educational Leadership*, 1967, 24, 733-739.

## GRANTS/PROPOSALS

- Rudner, L. M. & Dayton, C. M. Extensions of decision theory as a knowledge system framework. Proposal submitted to NSF, November, 2002. Not funded.
- Dayton, C. M. Prototype certification program in educational assessment. Proposal submitted to FIPSE LAAP program, March 1999. Not funded.
- Dayton, C. M. Randomized/Non-Randomized Design course in Joint Program in Survey Methodology, University of Maryland under NSF contract, funded for approximately \$15,000/year, 1994-2000.
- Dayton, C. M. Surveying sensitive behaviors. Center for Educational Research & Development, College of Education, University of Maryland, 1990-1991, funded for \$6250.

- Macready, G. B. & Dayton, C. M. The development of concomitant variable latent class models. Funded by National Science Foundation (SES 8318580), February, 1984-1986, funded for \$108,000.
- Dayton, C. M. & Uhl, N. P. Relationship between Holland Vocational Preference Inventory scores and performance measures of high school students. Cooperative Research Project 5-0581-2-12-1, 1966, funded for \$16,000.

## INVITED PRESENTATIONS

Dayton, C. M. Information Criteria for Model Comparisons. Invited presentation at the University of Virginia Psychology Department, Charlottesville, VA. October 2002.

Patterson, B., Dayton, C. M. & Graubard, B. Latent class analysis of complex survey data: application to dietary data. Invited session with discussion, American Statistical Association Joint Statistical Meetings, New York City, August, 2002.

Dayton, C. M. Colloquium entitled "A new approach for conducting pairwise comparisons of means." Invited presentation at University of Manitoba, Winnipeg, Canada, and November 1998.

Dayton, C. M. Colloquium entitled "Alternative multiple comparison approaches." Invited presentation at University of Wisconsin/Madison, November 1996.

Dayton, C. M. & Scheers, N. J. Latent class analysis of randomized-response data dealing with academic cheating. Invited paper presented at the IPN Symposium entitled "Applications of latent trait and latent class models in the social sciences," Academie Sankelmark, Germany, May 1994.

Macready, G. B. & Dayton, C. M. Latent class models for longitudinal assessment of trait acquisition. Invited paper presented at the Conference on Analysis of Latent Variables in Developmental Research, Penn State University, May 1992.

Dayton, C. M. Colloquium entitled "Latent class analysis applied to psychometric and medical data." Invited presentation at National Cancer Institute Seminar Series, June 1991.

Dayton, C. M. Evaluating student performance in applied statistics courses which emphasize data analysis. Invited paper presented at The Third International Conference on Teaching Statistics, International Statistical Institute and University of Otago, Dunedin, New Zealand, August 1990.

Dayton, C. M. & Macready, G. B. A latent class covariate model with applications to criterion-referenced testing. Invited paper presented at the 13th IPN Symposium, Keil, W. Germany, October 21-23, 1985.

Dayton, C. M. Statistical techniques for exploring data. Invited paper presented at the annual convention of the Northeastern Educational Research Association, Ellenville, New York, October 1980.

Dayton, C. M. & Macready, G. B. An introduction to probabilistic models for the validation of behavioral hierarchies. Invited paper presented at the Fourth Delaware Symposium on Curriculum, Learning, & Instruction, University of Delaware, June 1977.

## PRESENTATIONS AT PROFESSIONAL CONFERENCES

Kroopnick, M. H., Chen, J. Choi, J & Dayton, C. M. Assessing Classification Bias in Latent Class Analysis: Comparing Resubstitution and Leave-One-Out Methods. Paper presented at the Annual Meeting of American Educational Research Association, San Diego, April, 2009

Gao, J. & Dayton, C. Finite sample properties of post-model-selection estimators in linear regression. Poster session presented at the Annual Meeting of the American Educational Research Association, New York, NY, April, 2008.

Pan, X. & Dayton, C.M. Factors influencing the mixture index of fit in contingency tables. Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, April, 2007.

Mitchell, E.A., Dayton, C.M. & Scheers, N.J. Altitude and latitude and the risk of SIDS in the United States, 1985-2000. Paper presented at First Candle/SIDS Alliance 2005 Conference, Washington, DC September 2005.

Dayton, C.M. . A modeling approach to multiple comparisons among means and proportions. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, CA, April, 2004.

Dayton, C.M. A modeling approach to post-doc comparisons of means and proportions. Paper presented at the Second Workshop on Research Methodology (RM2003), Vrije University, Amsterdam, The Netherlands, June 2003.

Patterson, B. Dayton, C. M. & Graubard, B. Latent class analysis of complex survey data: Application to Dietary Data. Invited Symposium Paper with Discussion presented at the Annual Meeting of the American Statistical Association, New York, August 2002.

Dayton, C. M. Diagnostics for frequency models based on the two-point mixture index of model fit. Paper presented at the Psychometric Society annual meeting, Chapel Hill, NC, June 2002.

Gagne, Phill & Dayton, C. M. "Best regression" using information criteria. Paper presented at the National Council for Measurement in Education conference, New Orleans, April 2002.

Dayton, C. M. Performance of information criteria for number of components for product-binomial processes. Paper presented at the Mixtures 2001: Recent Developments in Mixture Modeling conference at Universitat der Bundeswehr in Hamburg, Germany, July 2001.

Patterson, B. Dayton, C. M. & Graubard, B. Latent class analysis of sample survey data. Paper presented at the Annual Meeting of the American Statistical Association, Baltimore, MD, August 1999

Dayton, C. M. A Two-Stage Estimation Strategy for Concomitant-Variable Latent Class Models. Paper presented at the meeting of the European Psychometric Society, Lueneburg, Germany, July 1999

Dayton, C. M. Computational Strategies for the two-point mixture index of fit. Paper presented at the Annual Meeting of the National Council on Measurement in Education, Montreal, April 1999

De Ayala, R. J., Kim, S. H. & Dayton, C. M. A reconceptualization of differential item functioning. Paper presented at the Annual Meeting of the American Educational Research Association, Montreal, April 1999

Yen, Shu Jing & Dayton, C. M. Latent structure of the IEA reading literacy test. Paper presented at the Annual Meeting of the American Educational Research Association, San Diego, April 1998.

Dayton, C. M. & Macready, G. B. Properties of the unstructured two-point mixture index of fit. Paper presented at the 10 European Meeting of the Psychometric Society meeting, Santiago, Spain, 1997

Macready, G. B. & Dayton, C. M. The use of latent class models in adaptive testing. Paper presented at the Annual Meeting of the Psychometric Society, Gatlinberg, Tennessee, June 1997.

Dayton, C. M. An assessment of information criteria for multiple comparisons. Paper presented at the Annual Meeting of the Annual Meeting of the Psychometric Society, Banff, Canada, June 1997.

Scheers, N. J., Dayton, C. M. & Kemp, J. S. Sleep practices associated with risk for lethal rebreathing among 206 infants dying suddenly and unexpectedly. Paper presented at the Fourth SIDS International Conference, Bethesda, MD, June 1996.

Dayton, C. M. Use of information criteria for multiple comparisons. Paper presented at the Annual Meeting of the American Educational Research Association, New York, April 1996.

Schafer, W. D., Dayton, C. M. & Powell, D. A. Intersection point confidence intervals as an alternative to the Johnson-Neyman technique. Paper presented at the Annual Meeting of the American Educational Research Annual Meeting, New York, April 1996.

Scheers, N. J., Dayton, C. M. & Kemp, J. S. Sleep practices associated with risk for lethal rebreathing among 206 infants dying suddenly and unexpectedly. Paper presented at the annual meeting of The American Pediatric Society/Society for Pediatric Research, D. C., May 1996.

Dayton, C. M. & Yen, Shu Jing. Assessing Rasch scalability of IEA reading items using a latent class approach. Paper presented at the Annual Meeting of the Psychometric Society, University of Minnesota, June 1995.

Lin, Ting Hsiang & Dayton, C. M. A Monte Carlo investigation of information theory selection criteria for latent class models. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, April 1994.

Dayton, C. M. Things I have learned (so far): Planning and organizing the beginning course. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, April 1992.

Dayton, C. M. The information approach to multiple comparisons. Paper presented at the Annual Meeting of the Psychometric Society, Rutgers University, June 1991.

Huang, J. C. & Dayton, C. M. A simulation study on multivariate multi-sample cluster analysis. Paper presented at the Annual Meeting of the Psychometric Society, Rutgers University, June 1991.

Kolb, R. R. & Dayton, C. M. Nonresponse in latent class modeling: An evaluation of the Hartley correction algorithm. Paper presented at the Annual Meeting of the Psychometric Society, Rutgers University, June 1991.

Dayton, C. M. & Macready, G. B. Assessing the fit of latent class models for large numbers of items. Paper presented at the Annual Meeting of the Psychometric Society, Princeton, N.J., June 1990.

Scheers, N. J. & Dayton, C. M. Increasing the validity of surveys of sensitive behavior: A comparison of randomized response models. Paper presented at the Annual Meeting of the American Educational Research Association, Boston, April 1990.

Dayton, C. M. & Macready, G. B. Partial mastery models. Paper presented at the Annual Meeting of National Council on Measurement in Education, San Francisco, March 1989.

Dayton, C. M. & Scheers, N. J. Improving the precision of estimates of quantitative traits using the covariate randomized response technique. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, March 1989.

Dayton, C. M. & Macready, G. B. The application of latent class models in adaptive testing. Paper presented at the Annual Meeting of the American Educational Research Association, San Francisco, March 1989.

Dayton, C. M. & Macready, G. B. Modeling mastery tests with concomitant-variable latent class models. Paper presented at the Annual Meeting of the Psychometric Society, Los Angeles, June 1988.

Dayton, C. M. Integrating analyses of databases into statistical instruction. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, April 1988.

Scheers, N. J. & Dayton, C. M. Improving the precision of survey estimates using the covariate randomized response technique. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans, April 1988.

Dayton, C. M. & Macready, G. B. Applications of latent class models with inequality constraints. Paper presented at the European Meeting of the Psychometric Society, Enschede, The Netherlands, June 1987.

Macready, G. B. & Dayton, C. M. An adaptive testing paradigm based on latent class modeling. Paper presented at the European Meeting of the Psychometric Society, Enschede, The Netherlands, June 1987.

Dayton, C. M. Application of the jackknife and the bootstrap to latent class models. Paper presented at the Annual Meeting of the Psychometric Society, Montreal, Canada, June 1987.

Dayton, C. M. & Macready, G. B. Application of the simplex algorithm to a complex latent class model. Paper presented at the Annual Meeting of the Psychometric Society, Toronto, Canada, June 1986.

Dayton, C. M. Migration models for latent classes. Paper presented at annual meeting of American Educational Research Association, San Francisco, April 1986.

Scheers, N. J. & Dayton, C. M. Improved estimates of academic cheating using the randomized response technique. Paper presented at annual meeting of American Educational Research Association, San Francisco, April 1986.

Macready, G. B. & Dayton, C. M. The use of covariates in latent class mastery modeling. Paper presented at annual meeting of American Educational Research Association, April 1986.

Nevius, A. & Dayton, C. M. Techniques for combining 2x2 contingency tables: a simulation study. Paper presented at Biometric Society (ENAR) meeting, March 1986.

Schafer, W. D. & Dayton, C. M. Analysis of balanced 2K mirror-image designs. Paper presented at annual meeting of the American Educational Research Association, Montreal, April 1983.

Higazi, S. M. F. & Dayton, C. M. Tables for a multivariate extension of the Dunnett test for unbalanced designs. Paper presented at the annual meeting of the American Statistical Association, Cincinnati, August 1982.

Scheers, N. J. & Dayton, C. M. The covariate unrelated question model. Paper presented at the annual meeting of the American Statistical Association, Cincinnati, August 1982.

Higazi, S. M. F. & Dayton, C. M. Comparing several experimental groups with a control in the multivariate case. Paper presented at the Biometric Society Spring Meeting, San Antonio, March 1982.

Dayton, C. M. Logistic growth models for latent classes. Paper presented at the annual meeting of the Psychometric Society, Montreal, June 1982.

Higazi, S. M. F. & Dayton, C. M. A multivariate extension of the Tukey test. Paper presented at the annual meeting of the American Statistical Association, August 1981.

Dayton, C. M. Corrected formulas for randomized response models. Paper presented at the annual meeting of the American Statistical Association, Houston, August 1980.

Dayton, C. M. & Macready, G. B. Concomitant-variable latent class models. Paper presented at annual meeting of the Psychometric Society, Iowa City, May 1980.

Schafer, W. D. & Dayton, C. M. Intermediate statistics using BMDP and SPSS. Paper presented at the annual meeting of the American Education Research Association, Boston, 1980.

Macready, G. B. & Dayton, C. M. A two-stage conditional estimation procedure for unrestricted latent class models. Paper presented at the annual meeting of the American Educational Research Association, San Francisco, 1979.

Dayton, C. M. Johnson-Neyman regions for dependent samples. Paper presented at annual meeting of the American Statistical Association, San Diego, 1978.

Macready, G. B. & Dayton, C. M. A multi-step conditional estimation procedure for unrestricted latent class models. Paper presented at annual meeting of the American Statistical Association, San Diego, 1978.

Dayton, C. M. Cost-benefit analysis of PSRO control activities. Paper prepared for Northeast AIDS (American Institute for Decision Sciences) Conference, Washington, DC, 1977.

Dayton, C. M. & Macready, G. B. The validation of models based on latent structures. Paper read at annual meeting of American Statistical Association, Chicago, 1977.

Dayton, C. M. Statistical comparisons among hierarchies based on latent structure models: Part I Theory. Paper presented at annual meeting of American Educational Research Association, New York, 1977.

Leitner, D. W. & Dayton, C. M. A two-group test of ordered hypotheses for multiple treatments: an extension of Page's L test. Paper presented at annual meeting of the American Educational Research Association, San Francisco, 1976.

Seidman, E., Dayton, C. M., Peterson, M. & Boek, J. Functions and outcomes of Child Development Consultants compared with elementary school counselors: report of 3 year's research. Paper presented at annual meeting of American Personnel & Guidance Association, Detroit, 1968.

Dayton, C. M. The t test: parametric or non-parametric? Paper presented at annual meeting of the American Educational Research Association, New York, 1967.

Byrne, R. H., Seidman, E., Dayton, C. M., & Holder, L. The elementary school counselor as psychologist. Symposium and paper at annual meeting of American Psychological Association, NY, 1966.

## **SERVICE TO UNIVERSITY 1992-2008**

- Campus Senate Executive Committee, 2006-2007
- Campus Senate, 2005-2008
- Campus Senate Faculty Affairs Committee, 1996-8; 2005-2006
- College of Education Promotion & Tenure Committee, 1993-94 (Chair); 1996-98; 2000-01 (Chair); 2001-2004
- Campus Senate Educational Affairs Committee, 2002-2003
- EDMS Promotion & Tenure Committee (Chair), 2002-2003
- University Dean's Review Committee (College of Education Dean), 2002-2003
- College of Education Senate 1994-97; 2000-02
- Search Committee for Dean, College of Education 1998-1999
- Campus Senate Adjunct Committee on Academic Procedures & Standards, 1993-95
- Campus Appointment, Promotion and Tenure Committee, 1992-93

## **SERVICE TO THE PROFESSION**

Regularly present a two-day workshop entitled *Logistic Regression Analysis* sponsored by the Department of Measurement & Statistics (most recent Summer 2014).

Organized and hosted a one-day conference entitled *Measuring Change in Complex Social Systems*, October 1999; sponsored by the Department of Measurement & Statistics and ERIC Clearinghouse on Assessment and Evaluation.

Chair, SIG/Educational Statisticians, American Educational Research Association, 1994-95; Program Chair, SIG/Ed Statisticians, American Educational Research Association, 1993-94; Newsletter Editor, SIG/Educational Statisticians, American Educational Research Association, 1995-1998

Consulting Editor, *Journal of Experimental Education*, 1997-2008. Past member of Editorial Board of *American Educational Research Journal* and Consulting Editor for *Journal of Educational Research*. Reviews for: *Psychometrika*, *Multivariate Behavioral Research*, *Psychological Bulletin*, *Psychological Methods*, *Psychological Science*, *Journal of Educational and Behavioral Statistics*, *Journal of Educational Measurement*, *Public Opinion Quarterly*, *American Educational Research Journal*.

Frequent reviewer for papers at professional conferences. Reviews for: *American Educational Research Association*; *Psychological Methods*; *Applied Psychological Measurement*.

## **DIRECTION OF Ph.D. DISSERTATIONS**

- Gao, J. Dissertation (2009): The impact of model selection on loglinear analysis of contingency tables
- Braaten, K. Dissertation (2008): An empirical investigation of unscalable components in scaling
- Zhang, D. (2008): Effects of model selection on the coverage probability of confidence intervals in binary-response logistic regression
- Bao, Han (2007) Investigating differential item function amplification and cancellation in applications of item response testlet models

- Pan, Xuemei (2006) Factors influencing the mixture index of fit in contingency tables showing independence.
- Samuelsen, K. (2005) Examining differential item functioning from a latent class perspective.
- Blahut, S. A. (2004) Latent class logistic regression with complex sample survey data
- Markovitz, Carrie (2003). Assessing fit of latent class models to complex survey data: Implications for drug use research.
- Kuo, Wen-Ling (2001). Two-stage concomitant variable latent class analysis.
- Patterson, Blossom (1998). Latent class analysis of sample survey data.
- Bolesta, Monica (1998). The generation and comparison of standard errors within a latent class framework using the bootstrap, parametric bootstrap, jackknife and Newton-Raphson techniques.
- Yen, Shu Jing (1997). Latent structure of the IEA Reading Literacy Test.
- Lin, Ting Hsiang (1994). An empirical study of selection criteria for latent class models.
- Kolb, Rita (1993). Correcting for nonresponse in latent class modeling: an examination of the EM algorithm.
- Huang, Chuen-Chuen (1993). An evaluation of model-selection criteria as alternatives to pairwise comparison procedures.
- Potthast, Margaret (1991). A simulation of categorical variable methodology in confirmatory factor analysis.
- Nevius, Anna (1984). Techniques for combining a series of 2x2 contingency tables.
- Scheers, Nancy-Jo (1982). The covariate unrelated question randomized response model.
- Higazi, Sohair (1982). Approximate upper percentage points for a multivariate extension of the studentized range distribution.
- Price, Lewis (1978). Algorithms for discovering hierarchical relationships among dichotomous items.
- Hayek, LeeAnn (1978). Properties of maximum likelihood estimators for a class of probabilistic models.
- Day, Roberta (1976). An empirical investigation of the Fisher Z transformation in comparing two multiple correlations.
- Leitner, Dennis (1975). A rank test of two group concordance with an a priori ranking.
- Kip, Marinus (1974). An empirical study of the effects of differential factor structure on discriminant function analysis.
- Shields, Joyce (1973). An empirical investigation of the effect of heteroscedasticity and heterogeneity of variance on the analysis of covariance and the Neyman-Johnson technique.
- Ross, N. Phillip (1973). Power comparisons of fixed effects randomized blocks and analysis of concomitant variables.
- Vogt, Dorothee (1971). An extension of the Rasch model to the case of polychotomously scored items.
- Bates, Marina (1971). The effect of partial information on confidence weighting behavior.
- Martuza, Victor (1968). A psychometric analog of the gambler's final bet.
- Brager, Gary (1968). A study of the phenomenon of experimenter bias using three types of classroom tasks.