

# Ronald Christensen

**Professor of Statistics**  
**University of New Mexico**  
**Department of Mathematics and Statistics**

## **EDUCATION:**

Ph.D., Statistics, University of Minnesota, 1983.

M.S., Statistics, University of Minnesota, 1976.

B.A., Mathematics, University of Minnesota, 1974.

## **EXPERIENCE:**

1994- Professor, Department of Mathematics and Statistics, University of New Mexico.

1998-2001, 2003- Founding Director, Statistics Clinic, University of New Mexico.

1988-1994 Associate Professor, Department of Mathematics and Statistics, University of New Mexico.

1982-1988 Assistant Professor, Department of Mathematical Sciences, Montana State University.

1994 Visiting Professor, Department of Mathematics and Statistics, University of Canterbury, Chch., N.Z.

1987 Visiting Assistant Professor, Department of Theoretical Statistics, University of Minnesota.

## **RESEARCH INTERESTS:**

Linear Models

Bayesian Inference

Log-linear and Logistic Regression Models

Statistical Methods

## **SOCIETIES AND HONORS:**

Fellow of the American Statistical Association, 1996

Fellow of the Institute of Mathematical Statistics, 1998

International Biometric Society

American Society for Quality

Phi Beta Kappa

## PUBLICATIONS:

1. Christensen, Ronald (2007). "Notes on the decomposition of effects in full factorial experimental designs." *Quality Engineering*, accepted. (Letter.)
2. Yang, Mingan, Hanson, Timothy, and Christensen, Ronald (2007). "Nonparametric Bayesian estimation of a bivariate density with interval censored data." *Statistics in Medicine*, under review.
3. Christensen, Ronald (2007). "Discussion: Dimension reduction, nonparametric regression, and multivariate linear models." *Statistical Science*, accepted.
4. Christensen, Ronald and Johnson, Wesley (2007). "A Conversation with Seymour Geisser." *Statistical Science*, accepted.
5. Christensen, Ronald (2006). "Comment on Monahan (2006)." *The American Statistician*, **60**, 295.
6. Christensen, Ronald (2006). "General prediction theory and the role of  $R^2$ ." *The American Statistician*, under revision.
7. Christensen, Ronald (2006). "The life and times of Seymour Geisser: A subjective interpretation." *Proceedings of the 2005 Joint Statistical Meetings*, to appear.
8. Christensen, Ronald (2006). "Comment on Friedman and Wall (2005)." *The American Statistician*, **60**, 101-102.
9. Christensen, Ronald (2005). "Reply to a comment on Christensen (2005)." *The American Statistician*, **59**, 353.
10. Johnson, Wesley and Christensen, Ronald (2005). "Seymour Geisser." *Encyclopedia of Statistics in Behavioral Science*, **3**, 2045-2048.
11. Christensen, Ronald (2005). "Testing Fisher, Neyman, Pearson, and Bayes." *The American Statistician*, **59**, 121-126.
12. Christensen, Ronald (2005). "Logistic Regression." In Everitt, B. & Howell, B.C. (Ed.s) *Encyclopedia of Behavioural Statistics*.
13. Johnson, Wesley O, Su, Chun-Lung, Gardner, Ian A., and Christensen, Ronald (2004). "Sample Size Calculations for Surveys to Substantiate Freedom of Populations from Infection Agents." *Biometrics*, **59**, 165-171.
14. Christensen, Ronald (2003). "Comment on "Could Fisher, Jeffreys, and Neyman Have Agreed About Testing."" *Statistical Science*, **18**, 12-13.
15. Christensen, Ronald (2003). "Significantly Insignificant  $F$  Tests." *The American Statistician*, **57**, 27-32.

16. Christensen, Ronald (2002). *Plane Answers to Complex Questions: The Theory of Linear Models*, Third Edition. Springer-Verlag, New York.
17. Fugate, Michael L., Christensen, Ronald, Hush, Don, and Scovel, Clint (2002). "An equivalence relation between parallel calibration, Q matrix, and principal component regression." *Journal of Chemometrics*, **16**(#1), 68-70.
18. Greenland, Sander and Christensen, Ronald (2001). "Data-augmentation priors for Bayesian and semi-Bayes analysis of conditional-logistic and proportional-hazards regression." *Statistics in Medicine*, **20**, 2421-2428.
19. Christensen, Ronald (2001). "Linear hypothesis." In *International Encyclopedia of the Social and Behavioral Sciences*, **13**, 8874-8881. Smelser, Neil J. (ed.) and Baltes, Paul B. (ed.), Elsevier/North-Holland, New York.
20. Christensen, Ronald (2001). "Analysis of variance and generalized linear models." In *International Encyclopedia of the Social and Behavioral Sciences*, **1**, 473-480. Smelser, Neil J. (ed.) and Baltes, Paul B. (ed.), Elsevier/North-Holland, New York.
21. Christensen, Ronald (2001). Letter to the Editor, *Journal of Quality Technology*, **33**, 127.
22. Christensen, Ronald (2001). *Advanced Linear Modelling: Multivariate, Time Series, and Spatial Data, Nonparametric Regression, p<sup>n</sup> Factorials, and Response Surfaces*, Second Edition. Springer-Verlag, New York.
23. Christensen, Ronald (2001). "Review of *Introduction to Graphical Modelling, Second Edition* by David Edwards." *Journal of the American Statistical Association*, **96**.
24. Christensen, Ronald (2000). "Discussion of 'Invariance and factorial models' by Peter McCullagh." *Journal of the Royal Statistical Society, Series B*, **62**, 247-248.
25. Christensen, Ronald (2000). "Linear and log-linear models." *Journal of the American Statistical Association*, **95**, 1290-1293.
26. Bedrick, Edward J., Christensen, Ronald, and Johnson, Wesley (2000). "Bayesian accelerated failure time analysis with application to veterinary epidemiology." *Statistics in Medicine*, **19**, 221-237.
27. Christensen, Ronald and Bedrick, Edward J. (1999). "A survey of some new alternatives to Wald's variance component test." *Tatra Mountains Mathematical Publications*, **17**, 91-102.
28. Bedrick, Edward J. and Christensen, Ronald (1999). "The effect of nonnormality on near replicate lack of fit tests." *Canadian Journal of Statistics*, **27**, 471-484.
29. Gilbert, Steven and Christensen, Ronald (1999). "Review of *Statistical Tests for Mixed Linear Models* by Khuri, Mathew and Sinha." *Journal of Quality Technology*, **31**, 469-470.

30. Christensen, Ronald (1999). "Review of *Matrix Algebra from a Statistician's Perspective* by David A. Harville." *Metrika*, **50**, 269-270.
31. Christensen, Ronald (1999). "Discussion of 'Prediction of spatial cumulative distribution functions using subsampling' by Cressie et al." *Journal of the American Statistical Association*, **94**, 99-100.
32. Christensen, Ronald (1998). "Discussion of 'Some algebra and geometry for hierarchical models, applied to diagnostics' by James S. Hodges." *Journal of the Royal Statistical Society, Series B*, **60**, 531.
33. Christensen, Ronald (1997). *Log-linear Models and Logistic Regression*, Second Edition. Springer-Verlag, New York.
34. Christensen, Ronald and Bedrick, Edward J. (1997). "Testing the independence assumption in linear models." *Journal of the American Statistical Association*, **92**, 1006-1016.
35. Bedrick, Edward J., Christensen, Ronald, and Johnson, Wesley (1997). "Bayesian binomial regression: Predicting survival at a trauma center." *The American Statistician*, **51**, 211-218.
36. Christensen, Ronald (1997). "Review of 'Multiple Comparisons: Theory and Methods' by Jason C. Hsu." *Technometrics*, **39**, 232-233.
37. Christensen, Ronald (1996). *Analysis of Variance, Design, and Regression: Applied Statistical Methods*. Chapman and Hall, London.
38. Christensen, Ronald (1996). *Plane Answers to Complex Questions: The Theory of Linear Models*, Second Edition. Springer-Verlag, New York.
39. Bedrick, Edward J., Christensen, Ronald, and Johnson, Wesley (1996). "A new perspective on priors for generalized linear models." *Journal of the American Statistical Association*, **91**, 1450-1460.
40. Christensen, Ronald, and Huzurbazar, A. V. (1996). "A note on augmenting resolution III designs." *The American Statistician*, **50**, 175-177.
41. Christensen, Ronald (1996). "Exact tests for variance components." *Biometrics*, **52**, 309-315.
42. Christensen, Ronald (1995). "Comment on Inman (1994)." *The American Statistician*, **49**, 400.
43. Christensen, Ronald and Utts, Jessica (1994). "Reply to a comment on Christensen and Utts (1992)." *The American Statistician*, **48**, 268.
44. Christensen, Ronald, and Blackwood, Larry G. (1993). "Tests for precision and accuracy of multiple measuring devices." *Technometrics*, **35**, 411-420.

45. Christensen, Ronald (1993). "Quadratic covariance estimation and equivalence of predictions." *Mathematical Geology*, **25**, 541-558.
46. Christensen, Ronald, Johnson, Wesley, and Pearson, Larry M. (1993). "Covariance function diagnostics for spatial linear models." *Mathematical Geology*, **25**, 145-160.
47. Christensen, Ronald (1993). "Comment on Schey (1993)." *The American Statistician*, **47**, 312-313.
48. Christensen, Ronald and Utts, Jessica (1993). "Reply to a comment on Christensen and Utts (1992)." *The American Statistician*, **47**, 311.
49. Christensen, Ronald and Utts, Jessica (1993). "Reply to a comment on Christensen and Utts (1992)." *The American Statistician*, **47**, 160.
50. Christensen, Ronald, Johnson, Wesley, and Pearson, Larry M. (1992). "Prediction diagnostics for spatial linear models." *Biometrika*, **79**, 583-591.
51. Christensen, Ronald and Utts, Jessica M. (1992). "Bayesian resolution of 'the exchange paradox'." *The American Statistician*, **46**, 274-276.
52. Christensen, Ronald and Utts, Jessica (1992). "Testing for nonadditivity in log-linear and logit models." *Journal of Statistical Planning and Inference*, **33**, 333-343.
53. Christensen, Ronald, Pearson, Larry M., and Johnson, Wesley (1992). "Case deletion diagnostics for mixed models." *Technometrics*, **34**, 38-45.
54. Christensen, Ronald (1992). "Comment on Chevan and Sutherland (1991)." *The American Statistician*, **46**, 74.
55. Christensen, Ronald (1991). "Small sample characterizations of near replicate lack of fit tests." *Journal of the American Statistical Association*, **86**, 752-756.
56. Christensen, Ronald (1990). *Linear Models for Multivariate, Time Series, and Spatial Data*. Springer-Verlag, New York.
57. Christensen, Ronald (1990). *Log-linear Models*. Springer-Verlag, New York.
58. Christensen, Ronald (1990). "The equivalence of predictions from universal kriging and intrinsic random function kriging." *Mathematical Geology*, **22**, 655-664.
59. Christensen, Ronald (1990). "Comment on Puntanen and Styan." *The American Statistician*, **44**, 191-192.
60. Christensen, Ronald (1989). "Sequential sampling without recall from a Dirichlet process." *The Canadian Journal of Statistics*, **17**, 391-397.
61. Christensen, Ronald (1989). "Lack of fit tests based on near or exact replicates." *Annals of Statistics*, **17**, 673-683.

62. Johnson, Wesley and Christensen, Ronald (1989). "Nonparametric Bayesian analysis of the accelerated failure time model." *Statistics & Probability Letters*, **8**, 179-184.
63. Christensen, Ronald (1989). "Review of 'The Method of Paired Comparisons' by H. A. David." *Technometrics*, **31**, 495-496.
64. Christensen, Ronald and Johnson, Wesley (1988). "Modeling accelerated failure time with a Dirichlet process." *Biometrika*, **75**, 693-704.
65. Christensen, Ronald (1988). "Estimating the variance in stagewise regression." *The American Statistician*, **42**, 288.
66. Christensen, Ronald (1987) *Plane Answers to Complex Questions: The Theory of Linear Models*. Springer-Verlag, New York.
67. Christensen, Ronald (1987). "The analysis of two-stage sampling data by ordinary least squares." *Journal of the American Statistical Association*, **82**, 492-498.
68. Johnson, Wesley and Christensen, Ronald (1986). "Bayesian nonparametric survival analysis for grouped Data." *The Canadian Journal of Statistics*, **14**, 307- 314
69. Christensen, Ronald (1986). "Finite stopping in sequential sampling without recall from a Dirichlet process." *Annals of Statistics*, **14**, 275-282.
70. Christensen, Ronald (1986). "Discussion of 'Bayesian Methods in Practice: Experiences in the Pharmaceutical Industry' by Racine et al." *Applied Statistics*, **35**, 134.
71. Christensen, Ronald and Huffman, Michael D. (1985). "Bayesian point estimation using the predictive distribution." *The American Statistician*, **39**, 319-321.
72. Pflug, I.J., Odlaug, Theoron E., and Christensen, Ronald (1985). "Computing a minimum public health sterilizing value for food with pH values from 4.6 to 6.0." *Journal of Food Protection*, **48**, 848-850.
73. Christensen, Ronald (1984). "A note on ordinary least squares methods for two-stage sampling." *Journal of the American Statistical Association*, **79**, 720-721.
74. Pflug, I.J., Smith, Geraldine M., and Christensen, Ronald (1981). "Effect of Soybean Casein Digest Agar Lot on Number of Bacillus stearothermophilus Spores Recovered." *Applied and Environmental Microbiology*, **42(2)**, 226-230.
75. Pflug, I.J. and Christensen, Ronald (1980). "Converting an F-value determined on the basis of one z-value to an F-value determined on the basis of a second z-value." *Journal of Food Science*, **45**, 35-40.
76. Berry, Donald A. and Christensen, Ronald (1979). "Empirical Bayes estimation of a binomial parameter via mixtures of Dirichlet processes." *Annals of Statistics*, **7**, 558-568.

## **CURRENT RESEARCH PROJECTS:**

Fugate, Michael L., Christensen, Ronald, and Bedrick, Edward J., (2007). “Adjusted means plots for detecting lack of fit and lack of independence in linear models.”

Han, Ziqin, Christensen, Ronald, and Bedrick, Edward J., (2007). “Goodness of fit tests for multinomial regression models.”

Gilbert, Steve and Christensen, Ronald (2007). “Improved variance component tests.”

Christensen, Ronald (2007). “Inconsistent Bayesian estimation.”

## **BOOKS IN DEVELOPMENT:**

Branscum, Adam, Christensen, Ronald, Hanson, Timothy R., and Johnson, Wesley O. (2007). *Bayesian Ideas and Data Analysis*.

Christensen, Ronald and Huzurbazar, A.V. (2007). *Industrial Statistics*.

Christensen, Ronald (2007). *Supermodels for the 21st Century: Modeling Data Using Linear Structures*.

## **GRANTS:**

Principal Investigator, NASA PURSUE Grant, 1999.

Project Director, NSF Grant DMS-9625897, 1996-1998.

Project Director, NSF SCREMS Grant DMS-9005939, 1990-1992.

## **PROFESSIONAL SERVICE:**

Chair Elect, Chair, Past Chair, Section on Bayesian Statistical Sciences, American Statistical Association, 2007-2009 (elected).

Associate Editor for *The American Statistician*, 2005-2008.

Editorial Board for *Statistical Science*, 2001-2003.

Associate Editor for *Journal of the American Statistical Association* Theory and Methods, 1996-1999, reappointed 2000-2002, reappointed 2003-2005.

Member, Committee on Publications, American Statistical Association, 1996-1998, reappointed 1999-2001.

Search Committee, *Journal of the American Statistical Association* Reviews Editor, 2000.

Search Committee, *Journal of the American Statistical Association* Theory and Methods Editor, 1998.

Council of Sections Representative, Section on Bayesian Statistical Science, American Statistical Association, 1999-2001 (elected).

Secretary-Treasurer, Section on Bayesian Statistical Science, American Statistical Association, 1996-1997 (elected).

Program Chair, Institute of Mathematical Statistics Western Regional Meeting, Seattle, Washington, June 27-29, 1999

NSF Panel Member, GOALI (Academic – Industrial Cooperative Research), 1999.

NSF Panel Member, DMS (Statistics), 1997.

Editorial Collaborator: *Annals of Statistics*; *Journal of the American Statistical Association*; *The American Statistician*; *Journal of Econometrics*; *Special Topics Index on Linear Models*; *Technometrics*; *Statistics and Probability Letters*; *Journal of Agricultural, Biological and Environmental Statistics*; *Biometrika*; *Journal of Forecasting*; *Issues and Controversies in Statistical Inference*; *Communications in Statistics*; *Mathematical Geology*; *Linear Algebra and Its Applications*; *Bayesian Statistics in Science and Technology: Case Studies*; *Statistical Science*; *Forecasting, Prediction and Modeling in Statistics and Econometrics*; *Behaviour Research and Therapy incorporating Behavior Assessment*; *American Journal of Public Health*; *Sankhya A*; *Journal of the Royal Statistical Society, Series B*; *Metrika*; *Tatra Mountain Mathematical Publications*; *Computational Statistics and Data Analysis*; *Statistics in Medicine*; *Journal of Time Series Analysis*; *Journal of Statistical Planning and Inference*; *Biometrics*; *Statistica Sinica*; *South African Statistical Journal*; *Journal of Multivariate Analysis*, *Statistical Papers*.

Montana representative to the American Statistical Association Council of Chapters, 1988 (elected).



## PRESENTATIONS:

### Invited Presentations

- The Life and Times of Seymour Geisser: A Subjective Interpretation, Joint Statistical Meetings, Minneapolis, MN, 2005.
- The Life and Times of Seymour Geisser: A Subjective Interpretation, Objective Bayes 5, Branson, MO, 2005.
- Variance Component Tests, Seely Conference on Linear Models, Oregon State University, Corvallis, OR, 2003.
- Testing: Fisher, Neyman-Pearson, and Bayes, Oklahoma State University, Stillwater, OK, 2003.
- Significantly Insignificant  $F$  Tests, Oklahoma Chapter of the ASA, Stillwater, OK, 2003.
- Significantly Insignificant  $F$  Tests, Los Alamos National Laboratory, Los Alamos, NM, 2002.
- Significantly Insignificant  $F$  Tests, University of Missouri, Columbia, MO, 2002.
- General prediction theory and the role of  $R^2$ , Northern Arizona University, Flagstaff, AZ, 2001.
- General prediction theory and the role of  $R^2$ , University of California, Davis, CA, 2001.
- General prediction theory and the role of  $R^2$ , Kansas State University, Manhattan, KS, 2001.
- General prediction theory and the role of  $R^2$ , Purdue University, West Lafayette, IN, 2001.
- General prediction theory and the role of  $R^2$ , University of Missouri, Columbia, MO, 2001.
- General prediction theory and the role of  $R^2$ , Graybill Conference on Linear Models, Ft. Collins, CO, 2001.
- General prediction theory and the role of  $R^2$ , Los Alamos National Laboratories, Los Alamos, NM, 2001.
- General prediction theory and the role of  $R^2$ , University of Iowa, Iowa City, IA, 2001.
- General prediction theory and the role of  $R^2$ , University of Canterbury, Christchurch, New Zealand, 2000.
- Evaluating the independence assumption in linear models, Eighth International Workshop on Matrices and Statistics, University of Tampere, Finland, 1999.
- Parametric modeling of competing risks, Arizona State University, Tempe, AZ, 1999.
- Parametric modeling of competing risks, Purdue University, West Lafayette, IN, 1999.
- Alternatives to Wald's variance component test, ProbaStat '98: International Conference on Probability and Mathematical Statistics, Bratislava, Slovakia, 1998.
- Statistical directions for Rocky Mountain statistics groups in the 21st century, ASA Montana chapter, Butte, MT, 1997.
- Testing lack of fit and the independence assumption in linear models, Montana State University, Bozeman, MT, 1997.

Bayesian binomial regression: The rest of the story, Montana State University, Bozeman, MT, 1997.

How to survive doing everything wrong, North American New Researcher's Conference, Laramie, WY, 1997.

Testing the independence assumption in linear models, University of Missouri, Rolla, MO, 1997.

Testing the independence assumption in linear models, Conference on Inference and Applications, Minneapolis, MN, 1996.

Testing the independence assumption in linear models, Colorado State University, Fort Collins, CO, 1996.

Testing the independence assumption in linear models, University of Wyoming, Laramie, WY, 1996.

Testing the independence assumption in linear models, University of Missouri, Columbia, MO, 1995.

Testing the independence assumption in linear models, Arizona State University, Tempe, AZ, 1995.

Testing the independence assumption in linear models, University of Florida, Gainesville, FL, 1995.

Testing the independence assumption in linear models, University of Georgia, Athens, GA, 1995.

Testing the independence assumption in linear models, University of Canterbury, Chch., New Zealand, 1994.

Tests for precision and accuracy of multiple measuring devices, University of Georgia, Athens, GA, 1993.

Tests for precision and accuracy of multiple measuring devices, Mississippi State University, Jackson, MS, 1993.

Tests for precision and accuracy of multiple measuring devices, Northern Illinois University, DeKalb, IL, 1993.

Tests for precision and accuracy of multiple measuring devices, ASA Chapter Meeting, Santa Fe, NM, 1993.

Case deletion diagnostics for spatial linear models, Oregon State University, Corvallis, OR, 1992.

Case deletion diagnostics for general Gauss-Markov models, Kansas State University, Manhattan, KS, 1991.

Case deletion diagnostics for general Gauss-Markov models, University of Iowa, Iowa City, IA, 1991.

Case deletion diagnostics for general Gauss-Markov models, University of California, Davis, CA, 1990.

Case deletion diagnostics and variable selection methods for generalized linear models, ASA Chapter Meeting, Albq., NM, 1988.

Near replicate lack of fit tests, Cornell University, Ithica, NY, 1987.

An introduction to Bayesian statistics, Batelle Northwest, Hanford, WA, 1986.

Sequential sampling without recall from a Dirichlet process, University of California, Davis, CA, 1984.

Noninformative priors, ASA Chapter Meeting, Helena, MT, 1982,

### **Contributed Presentations**

Bayesian nonparametric regression, Joint Statistical Meetings, Indianapolis, IN, 2000. (Topic Contributed.)

Bayesian nonparametric analysis of the accelerated failure time model, NSF-NBER Seminar on Bayesian Inference in Statistics and Econometrics, ITAM, Mexico City, Mexico, 1986.

Bayesian nonparametric survival analysis for life tables, NSF-NBER Seminar on Bayesian Inference in Statistics and Econometrics, Rutgers University, Newark, NJ, 1985.

Sequential sampling without recall from a Dirichlet process, NSF-NBER Seminar on Bayesian Inference in Statistics and Econometrics, University of Florida, Gainesville, FL, 1982.

## REFERENCES

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M.D. Anderson Cancer Center, Dept. of Biostatistics  
Texas Medical Center  
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Houston, TX 77030-4009  
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