# CHRISTOPHER R. BILDER

University of Nebraska-Lincoln
Department of Statistics
Lincoln, NE 68583
www.chrisbilder.com

## EDUCATION

Ph.D. Statistics (GPA 4.0/4.0), Kansas State University, 2000
  ‣ Dissertation: Testing for Marginal Independence with Pick Any/c Variables
M.S. Statistics (GPA 4.0/4.0), Kansas State University, 1996
B.S. Mathematics (GPA 3.902/4.0), University of Nebraska-Omaha, 1994

## RESEARCH INTERESTS

Categorical data analysis, group testing, R software, statistics in sports, and statistics education

## PROFESSIONAL EXPERIENCE

August 2012 – Present: **PROFESSOR** (nine-month appointment)
August 2006 – August 2012: **ASSOCIATE PROFESSOR** (nine-month appointment)
August 2003 – August 2006: **ASSISTANT PROFESSOR** (nine-month appointment)
Department of Statistics, University of Nebraska-Lincoln
  ‣ Teaching – 2-2 teaching load 2003-2014 and 2-1 teaching load 2014-present
    ▪ Alpha Seminar*, Applied Multivariate Statistical Analysis, Bootstrap Methods and Their Application*, Categorical Data Analysis, Computational Statistics*, Computing Tools for Statisticians*, Introduction to Mathematical Statistics, Multiple Regression Analysis, Statistical Methods in Research, Statistics and Applications, Tools for Statisticians*, and Time Series Analysis*; *new course developed for the department
    ▪ Taught Bootstrap Methods and Their Application to UNL and Kansas State University students through a live video link
    ▪ Created a blended learning teaching format for Categorical Data Analysis in 2013, Applied Multivariate Statistical Analysis in 2014, Multiple Regression Analysis in 2015, and Computing Tools for Statisticians in 2019
    ▪ Created an online teaching format for Statistical Methods in Research in 2020
    ▪ Use a Surface and data projector extensively for in-class teaching
  ‣ Developed and maintain comprehensive course and research websites accessible through the www.chrisbilder.com web portal
  ‣ Created a YouTube channel at https://www.youtube.com/c/ChrisBilder that features my teaching and research; over 25,500 video views for a total of over 206,000 minutes in 2020
  ‣ University committee assignments
    ▪ Arts & Sciences Assessment Committee (8/07-8/10)
    ▪ Blended Learning Committee (2/19-7/19)
    ▪ IANR Faculty Task Force for Defining Standard of Excellence Principles in Faculty Evaluations (8/11-12/11)
    ▪ Faculty Senate's Information Technologies and Services Committee (8/11-8/14)
  ‣ Departmental committee assignments
    ▪ Achievement-Centered Education (8-18-present), Chair (8-18-present)
    ▪ Advisory (9/07-8/11; twice elected by department's faculty)
    ▪ Awards (8/12-8/14), Chair (8/12-8/14)
    ▪ Departmental Chair Search (5/12-12/12)
    ▪ Graduate Studies (8/03-9/13; 8/14-8/17), Interim Chair (8/05-8/06), Chair (8/14-8/17)
    ▪ Graduate Curriculum (8/16-8/17), Chair (8/16-8/17)
    ▪ Hiring (9/05-12/05; 9/13-3/14)
    ▪ Library liaison (8/08-8/13)

- MS Comprehensive and PhD Qualifying Exam (8/06-9/07)
- Promotion and Tenure (8/06-present)
- Technology (8/03-8/05, 8/06-8/17, 8/18-present)

August 2000 – August 2003: **ASSISTANT PROFESSOR** (nine-month appointment)
Department of Statistics, Oklahoma State University
- Teaching – 2-2 teaching load
  - Applied Regression Analysis, Categorical Data Analysis, Introductory Business Statistics, Multivariate Methods, S Programming, SAS Programming, and Time Series Analysis
  - Developed and maintained comprehensive course websites that included message boards, chat rooms, and database interaction with active server pages
  - Used a computer and data projector extensively for in-class teaching
- Departmental committee assignments
  - Computing (8/00-8/03), Chair (1/01-8/03)
  - Graduate (1/01-5/01; 8/02-8/03)
  - Library (1/01-5/01; 8/02-8/03), Chair (1/01-5/01; 8/02-8/03)
  - Seminar (8/01-5/02), Chair (8/01-5/02)
  - Undergraduate (8/02-8/03)
- Constructed the Department of Statistics website and served as its webmaster

May 1998 – July 2000: **WEBSITE DESIGNER**
Department of Statistics, Kansas State University

August 1994 – December 1999: **GRADUATE TEACHING ASSISTANT**
Department of Statistics, Kansas State University

June 1997 – August 1997: **STATISTICS INTERN**
Statistics Group, Idaho National Laboratory

May 1996 – August 1996: **BIOMETRICS INTERN**
Biometrics and Data Management Department, Hoechst Marion Roussel

January 1995 – August 1995: **STATISTICAL CONSULTANT**
Institute for Social and Behavioral Research, Kansas State University

May 1993 – August 1993 and May 1994 – August 1994: **ACTUARIAL INTERN**
Pricing Department, National Indemnity Company (Berkshire Hathaway Insurance Group)

## *HONORS*

- Fellow of the American Statistical Association (ASA) with citation "For influential contributions in categorical data analysis and group testing methods; for leadership in the field of statistics education, especially the innovative use of computer technology; and for extensive departmental and ASA service."
- ASA's Statistical Significance Poster Award given by the Scientific and Public Affairs Advisory Committee for the association
- ASA's Outstanding Statistical Application Award (twice)
- Best Paper in *Biometrics* by an International Biometric Society Member Award
- University of Nebraska-Lincoln Faculty Development Fellowship (twice)
- Consortium for the Advancement of Undergraduate Statistics Education Web Resource of the Year Award
- International Biometric Society ENAR Meeting student travel award winning paper
- Kansas State University Outstanding Graduate Teaching Assistant of the Year Award
- Kansas State University Department of Statistics Holly and Beth Fryer Scholarship
- American Society for Quality Statistics Division's Ellis R. Ott Scholarship
- University of Nebraska-Omaha Department of Mathematics James M. Earl Scholarship (twice)
- Association of Old Crows Scholarship
- University of Nebraska-Omaha Regents Scholarship (full tuition scholarship)

## PUBLICATIONS – BOOKS AND REFEREED STATISTICAL PAPERS

1. Liu, Y., McMahan, C., Tebbs, J., Gallagher, C., and Bilder, C. (2020). Generalized additive regression for group testing data. To appear in *Biostatistics*.

2. Bilder, C. (2020). In or out? The new flagstick dilemma for putting in golf. *Chance* 33(4), 56-61.

3. Joyner, C., McMahan, C., Tebbs, J., and Bilder, C. (2020). From mixed effects modeling to spike and slab variable selection: A Bayesian regression model for group testing data. *Biometrics* 76(3), 913-923.

4. Hou, P., Tebbs, J., Wang, D., McMahan, C., and Bilder, C. (2020). Array testing with multiplex assays. *Biostatistics* 21(3), 417-431.

5. Bilder, C., Iwen, P., Abdalhamid, B., Tebbs, J., and McMahan, C. (2020). Tests in short supply? Try group testing. *Significance* 17(3), 15-16.

6. Bilder, C. (2019). Group testing for estimation. *Wiley StatsRef: Statistics Reference Online*. https://doi.org/10.1002/9781118445112.stat08231.

7. Hitt, B., Bilder, C., Tebbs, J., and McMahan, C. (2019). The objective function controversy for group testing: Much ado about nothing? *Statistics in Medicine* 38(24), 4912-4923.

8. Bilder, C. (2019). Group testing for identification. *Wiley StatsRef: Statistics Reference Online*. https://doi.org/10.1002/9781118445112.stat08227.

9. Bilder, C., Tebbs, J., and McMahan, C. (2019). Informative group testing for multiplex assays. *Biometrics* 75(1), 278-288.

10. Wang, D., McMahan, C., Tebbs, J., and Bilder, C. (2018). Group testing case identification with biomarker information. *Computational Statistics and Data Analysis* 122, 156-166.

11. McMahan, C., Tebbs, J., Hanson, T., and Bilder, C. (2017). Bayesian regression for group testing data. *Biometrics* 73(4), 1443-1452.

12. Warasi, M., McMahan, C., Tebbs, J., and Bilder, C. (2017). Group testing regression models with dilution submodels. *Statistics in Medicine* 36(30), 4860-4872.

13. Hou, P., Tebbs, J., Bilder, C., and McMahan, C. (2017). Hierarchical group testing for multiple infections. *Biometrics* 73(2), 656-665. (winner of the ASA's Outstanding Statistical Application Award in 2018 and the Best Paper in *Biometrics* by an International Biometric Society Member Award in 2017; video abstract: http://youtu.be/58UwRxYur7o)

14. Warasi, M., Tebbs, J., McMahan, C., and Bilder, C. (2016). Estimating the prevalence of multiple diseases from two-stage hierarchical pooling. *Statistics in Medicine* 35(21), 3851-3864.

15. McMahan, C., Tebbs, J., and Bilder, C. (2016). Rejoinder to "A note on the evaluation of group testing algorithms in the presence of misclassification." *Biometrics* 72(1), 303-304.

16. Black, M., Bilder, C., and Tebbs, J. (2015). Optimal retesting configurations for hierarchical group testing. *Journal of the Royal Statistical Society: Series C* 64(4), 693-710.

17. Bilder, C. and Loughin, T. (2014). *Analysis of Categorical Data with R*. CRC Press.

18. Bilder, C. and Loughin, T. (2014). *Solutions Manual for "Analysis of Categorical Data with R"*. CRC Press.

19. Koziol, N. and Bilder, C. (2014). MRCV: a package for analyzing categorical variables with multiple response options. *The R Journal* 6(1), 144-150.

20. Tebbs, J., McMahan, C., and Bilder, C. (2013). Two-stage hierarchical group testing for multiple infections with application to the Infertility Prevention Project. *Biometrics* 69(4), 1064-1073. (winner of the ASA's Outstanding Statistical Application Award in 2014)

21. Zhang, B., Bilder, C., and Tebbs, J. (2013). Regression analysis for multiple-disease group testing data. *Statistics in Medicine* 32(28), 4954-4966.

22. McMahan, C., Tebbs, J., and Bilder, C. (2013). Regression models for group testing data with pool dilution effects. *Biostatistics* 14(2), 284-298.

23. Zhang, B., Bilder, C., and Tebbs, J. (2013). Group testing regression model estimation when case identification is a goal. *Biometrical Journal* 55(2), 173-189.

24. Bilder, C. and Tebbs, J. (2012). Pooled testing procedures for screening high volume clinical specimens in heterogeneous populations. *Statistics in Medicine* 31(27), 3261-3268.

25. McMahan, C., Tebbs, J., and Bilder, C. (2012). Two-dimensional informative array testing. *Biometrics* 68(3), 793-804.

26. Black, M., Bilder, C., and Tebbs, J. (2012). Group testing in heterogeneous populations by using halving algorithms. *Journal of the Royal Statistical Society: Series C* 61(2), 277-290.

27. McMahan, C., Tebbs, J., and Bilder, C. (2012). Informative Dorfman screening. *Biometrics* 68(1), 287-296.

28. Loughin, T. and Bilder, C. (2011). On the use of a log-rate model for survey-weighted categorical data. *Communications in Statistics: Theory and Methods* 40(15), 2661-2669.

29. Bilder, C., Zhang, B., Schaarschmidt, F., and Tebbs, J. (2010). binGroup: a package for group testing, *The R Journal* 2(2), 56-60.

30. Bilder, C., Tebbs, J., and Chen, P. (2010). Informative retesting. *Journal of the American Statistical Association* 105(3), 942-955.

31. Bilder, C. and Loughin, T. (2009). Modeling multiple-response categorical data from complex surveys. *The Canadian Journal of Statistics* 37(4), 553-570.

32. Chen, P., Tebbs, J., and Bilder, C. (2009). Group testing regression models with fixed and random effects. *Biometrics* 65(4), 1270-1278.

33. Bilder, C. (2009). Human or Cylon? Group testing on Battlestar Galactica. *Chance* 22(3), 46-50.

34. Chen, P., Tebbs, J., and Bilder, C. (2009). Global goodness-of-fit for group testing regression models. *Statistics in Medicine* 28(23), 2912-2928.

35. Bilder, C. and Tebbs, J. (2009). Bias, efficiency, and agreement for group testing regression models. *Journal of Statistical Computation and Simulation* 79(1), 67-80.

36. Bilder, C. and Loughin, T. (2007). Modeling association between two or more categorical variables that allow for multiple category choices. *Communications in Statistics: Theory and Methods* 36(2), 433-451.

37. Tebbs, J. and Bilder, C. (2006). Hypothesis tests for and against a simple order among proportions estimated by pooled testing. *Biometrical Journal* 48(5), 792-804.

38. Bilder, C. and Tebbs, J. (2005). Empirical Bayesian estimation of the disease transmission probability in multiple-vector-transfer designs. *Biometrical Journal* 47(4), 502-516.

39. Tebbs, J. and Bilder, C. (2004). Confidence interval procedures for the probability of disease transmission in multiple-vector-transfer designs. *Journal of Agricultural, Biological, and Environmental Statistics* 9(1), 75-90.

40. Bilder, C. and Loughin, T. (2004). Testing for marginal independence between two categorical variables with multiple responses. *Biometrics* 60(1), 241-248.

41. Tebbs, J., Bilder, C., and Moser, B. (2003). An empirical Bayes group-testing approach to estimating small proportions. *Communications in Statistics: Theory and Methods* 32(5), 983-995.

42. Bilder, C. and Loughin, T. (2002). Testing for conditional multiple marginal independence. *Biometrics* 58(1), 200-208.

43. Bilder, C. and Loughin, T. (2001). On the first-order Rao-Scott correction of the Umesh-Loughin-Scherer statistic. *Biometrics* 57(4), 1253-1255.

44. Malone, C. and Bilder, C. (2001). Statistics course websites: beyond syllabus.html. *Journal of Statistics Education* 9(2), http://jse.amstat.org/v9n2/malone.html.

45. Bilder, C., Loughin, T., and Nettleton, D. (2000). Multiple marginal independence testing for pick any/c variables. *Communications in Statistics: Simulation and Computation* 29(4), 1285-1316.

46. Bilder, C. and Loughin, T. (1998). "It's good!" An analysis of the probability of success for placekicks. *Chance* 11(2), 20-24 & 30.

## PUBLICATIONS – SUBJECT MATTER, SOFTWARE, AND OTHER ITEMS

1. Bilder, C., Iwen, P., and Abdalhamid, B. (2020). Pool size selection when testing for SARS-CoV-2. To appear in *Clinical Infectious Diseases*.

2. Abdalhamid, B., Bilder, C., Garrett, J., and Iwen, P. (2020). Cost effectiveness of sample pooling for SARS-CoV-2 testing. *The Journal of Infection in Developing Countries* 14(10), 1136-1137.

3. Abdalhamid, B., Bilder, C., McCutchen, E., Hinrichs, S., Koepsell, S., and Iwen, P. (2020). Assessment of specimen pooling to conserve SARS CoV-2 testing resources. *American Journal of Clinical Pathology* 153(6), 715-718.

4. Hitt, B., Bilder, C., McMahan, C., and Tebbs, J. (2020). A Shiny app for pooled testing. http://www.chrisbilder.com/shiny. Last update was in 2020.

5. Hitt, B., Bilder, C., Schaarschmidt, F., Biggerstaff, B., McMahan, C., and Tebbs, J. (2020). binGroup2: Identification and estimation for group testing. R package version 1.0. Last update was in 2020.

6. Bilder, C., Tebbs, J., and McMahan, C. (2019). Cost-effective surveillance for infectious diseases through specimen pooling and multiplex assays. *Online Journal of Public Health Informatics* 11(1). http://doi.org/10.5210/ojphi.v11i1.9743.

7. Bilder, C. (2019). New to JSM? Read this before you go. *Amstat News* 503, May 2019, 14-16.

8. Bilder, C. (2018). JSM for Newbies. *Amstat News* 491, May 2018, 35-37.

9. Bilder, C. (2017). Is this your first JSM? Here are tips to navigate the conference. *Amstat News* 479, May 2017, 32-33.

10. Bilder, C. (2016). Don't let what happens at JSM stay at JSM! How to get the most out of your first Joint Statistical Meetings. *Amstat News* 467, May 2016, 24-26.

11. Bilder, C. (2015). Don't let what happens at JSM stay at JSM! How to get the most out of your first Joint Statistical Meetings. *Amstat News* 455, May 2015, 29-31.

12. Bilder, C. (2014). What happens at JSM should not stay at JSM! How to get the most out of the Joint Statistical Meetings. *Amstat News* 443, May 2014, 23-25.

13. Koziol, N. and Bilder, C. (2013). MRCV: methods for analyzing multiple response categorical variables. R package version 0.1-0. Last update was in 2014.

14. Bilder, C. (2013). What happens at JSM should not stay at JSM! How to get the most out of the Joint Statistical Meetings. *Amstat News* 431, May 2013, 32-34.

15. Bilder, C. (2012). How to get the most out of your first Joint Statistical Meetings. *Amstat News* 419, May 2012, 22-24.

16. Bilder, C. and Tebbs, J. (2011). Informative retesting procedures to assay high volume clinical specimens. *Proceedings of the 58th World Statistics Congress of the International Statistical Institute*.

17. Bilder, C. (2011). What happens at JSM should *not* stay at JSM! How to get the most out of the Joint Statistical Meetings. *Amstat News* 407, May 2011, 25-27.

18. Zhang, B., Bilder, C., and Schaarschmidt, F. (2009). binGroup: evaluation and experimental design for binomial group testing. R package version 1.0-3. Last update was in 2018.

19. Zhang, B. and Bilder, C. (2009). The EM algorithm for group testing regression models under matrix pooling. Technical Report, Department of Statistics, University of Nebraska-Lincoln.

20. Bilder, C., Black, M., and Tebbs, J. (2009). Expected number of tests for halving and matrix pooling in heterogeneous populations. Technical Report, Department of Statistics, University of Nebraska-Lincoln.

21. Bilder, C. and Malone, C. (2008). Tablet PC applications in statistics education, Part I. *2008 Proceedings of the American Statistical Association,* Section on Statistics Education, Alexandria, VA: American Statistical Association, 2813-2820.

22. Bilder, C. and Tebbs, J. (2008). Review of "An Introduction to Categorical Data Analysis". *Journal of the American Statistical Association* 103(3), 1323.

23. Bilder, C. and Loughin, T. (2007). Estimation and testing for association with multiple-response categorical variables from complex surveys. *2007 Proceedings of the American Statistical Association,* Section on Survey Research Methods, Alexandria, VA: American Statistical Association, 2838-2849.

24. Bilder, C. (2005). Group testing model estimation and inference. *2005 Proceedings of the American Statistical Association,* Biometrics Section, Alexandria, VA: American Statistical Association, 177-182.

25. Stewart, S. and Bilder, C. (2004). Probability models for 64-Team NCAA tournaments. *2004 Proceedings of the American Statistical Association,* Statistics in Sports Section, Alexandria, VA: American Statistical Association, 3218-3224.

26. Bilder, C. and Tebbs, J. (2004). Empirical Bayesian estimation of the disease transmission probability in multiple-vector-transfer designs. *2004 Proceedings of the American Statistical Association,* Biometrics Section, Alexandria, VA: American Statistical Association, 277-284.

27. Bilder, C. and Loughin, T. (2003). Strategies for modeling two categorical variables with multiple category choices. *2003 Proceedings of the American Statistical Association,* Section on Survey Research Methods, Alexandria, VA: American Statistical Association, 560-567.

28. Bilder, C. and Loughin, T. (2002). Testing for simultaneous pairwise marginal independence. *2002 Proceedings of the American Statistical Association,* Biometrics Section, Alexandria, VA: American Statistical Association, 254-259.

29. Rumsey, D. and Bilder, C. (2001). The STAR Library is ready for launch! Newsletter for the Section on Statistical Education of the American Statistical Association 7(2).

30. Bilder, C. (2001). What is the shelf life? *Statistics Teaching and Resource Library*, February 7, www.causeweb.org/repository/StarLibrary/activities/stability_testing.

31. Malone, C. and Bilder, C. (2000). Increasing student-instructor and student-student interaction through a statistics course website. *American Statistical Association Proceedings of the Section on Statistical Education*, 88-93.

32. Loughin, T. and Bilder, C. (1999). Review of "Bootstrap Methods and Their Application". *Journal of the American Statistical Association* 94(1), 334-335.

## GRANTS AWARDED – STATISTICS RESEARCH

1. National Institutes of Health award #R01AI121351 (2016-2020), *Group Testing for Infectious Disease Detection: Multiplex Assays and Back-End Screening*, National Institute of Allergy and Infectious Diseases, PI.

2. National Institutes of Health award #R01AI067373 (2007-2011), *Disease Detection and Prevalence Estimation through Informative Group Testing*, National Institute of Allergy and Infectious Diseases, PI.

3. National Science Foundation award #0418632 (2004-2007), *Estimation and Testing for Associations with Multiple-Response Categorical Variables from Complex Surveys*, Division of Social and Economic Sciences, PI.

4. Big 12 Faculty Fellowship Program Award (2004), *Group Testing Models to Predict Individual Outcomes for One or More Traits*, University of Nebraska-Lincoln, PI.

5. National Science Foundation award #0207212 (2002-2003), *Testing for Marginal Independence between Two or More Multiple-Response Categorical Variables*, Division of Social and Economic Sciences, PI.

6. College of Arts and Sciences Dean's Incentive Grant (2002), *Generalizations of the Cochran Statistic to Test for Conditional Independence*, Oklahoma State University, PI.

7. College of Arts and Sciences Travel Grant Program (2001), *Testing for Conditional Multiple Marginal Independence in the Presence of Pick Any/c Variables*, Oklahoma State University, PI.

## GRANTS AWARDED – STATISTICS EDUCATION

1. U.S. Department of Education award #P200A100138 (2010-2013), Graduate Assistance in Areas of National Need program, co-PI.

2. Duxbury Press (2001), *Statistics Teaching and Resource Library*, funds to support its continued development, PI.

3. College of Arts and Sciences Summer Research Program (2001), *Statistics Teaching and Resource Library*, Oklahoma State University, PI.

4. College of Arts and Sciences Dean's Incentive Grant (2001), *Computer-Enhanced Teaching in the Classroom for Statistics Courses*, Oklahoma State University, PI.

## PRESENTATIONS – SHORT COURSE

1. Bilder, C. and Loughin, T. "Analysis of Categorical Data," Joint Statistical Meetings, August 1, 2017; Baltimore, MD. http://chrisbilder.com/JSM.

2. Bilder, C. and Loughin, T. "Analysis of Categorical Data," Statistical Society of Canada Annual Meeting, May 29, 2016; St. Catharines, ON.

3. Bilder, C. and Loughin, T. "Analysis of Categorical Data," Joint Statistical Meetings, August 9, 2015; Seattle, WA.

4. Bilder, C. "An Introduction to R," Gallup, Inc., September 16, 2011; Omaha, NE. http://chrisbilder.com/workshop.

5. Bilder, C. and Malone, C. "Using Tablet PCs to improve teaching and learning," United States Conference on Teaching Statistics, May 18, 2007; Columbus, OH.

## PRESENTATIONS – CONFERENCE

1. Bilder, C. "Group Testing for Identifying Cases of COVID-19: Opportunities and Challenges" Panelist, IBS ENAR Meeting, March 2021; Baltimore, MD.

2. Bilder, C., Hitt, B., Benfer, J., Blaney, K., Carter, B., Eveland, K., McMahan, C., and Tebbs, J. "To pool or not to pool? A web-based Shiny app to help laboratories make the specimen pooling decision," STD Prevention Conference, September 2020; Atlanta, GA.

3. Bilder, C. and McMahan, C. "JUST GROUP IT. Group testing for identification," Joint Statistical Meetings, August 6, 2020; Philadelphia, PA.

4. McMahan, C. and Bilder, C. "JUST GROUP IT. Group testing for estimation," Joint Statistical Meetings, August 6, 2020; Philadelphia, PA.

5. Bilder, C., Hitt, B., Tebbs, J., and McMahan, C. "A Shiny app for making the specimen pooling decision," UseR! July 2020; St. Louis, MO. (Conference cancelled due to COVID-19)

6. Bilder, C., Tebbs, J., and McMahan, C. "Sexually transmitted disease detection using array testing algorithms with multiplex assays," Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistics and Data Science, April 2020; Overland Park, KS. (Conference cancelled due to COVID-19)

7. Mokalled, S., McMahan, C., Brown, D., Tebbs, J., and Bilder, C. "Acknowledging the dilution effect in group testing regression: A new approach," IBS ENAR Meeting, March 24, 2020; Nashville, TN. (Student travel award winning paper)

8. McMahan, C., Tebbs, J., Bilder, C., and Joyner, C. "From mixed-effects modeling to spike and slab variable selection: A Bayesian regression model for group testing data," International Conference of the ERCIM WG on Computational and Methodological Statistics, December 14, 2019; London, England.

9. Bilder, C., "In or out? The new flagstick dilemma for putting in golf," Midwest Sports Analytics Meeting, November 23, 2019; Pella, IA.

10. McMahan, C., Liu, Y., Tebbs, J., and Bilder, C. "An additive regression model for group testing data," Institute for Operations Research and the Management Sciences Annual Meeting, October 20, 2019, Seattle, WA.

11. Bilder, C., "In or out? The new flagstick dilemma for putting in golf," New England Symposium on Statistics in Sports, September 28, 2019; Boston, MA.

12. Bilder, C., Tebbs, J., and McMahan, C. "Strategies for pooling in array testing configurations with multiplex assays," Joint Statistical Meetings, July 30, 2019; Denver, CO. (ASA's Statistical Significance Poster Award)

13. Bilder, C., Hitt, B., Tebbs, J., and McMahan, C. "A user-friendly Shiny web application for choosing pool sizes when testing pooled specimens," Association of Public Health Laboratories Annual Meeting, June 4, 2019; St. Louis, MO.

14. Tebbs, J., Liu, Y., McMahan, C., and Bilder, C. "Generalized additive regression for group testing data," IBS ENAR Meeting, March 26, 2019; Philadelphia, PA.

15. Bilder, C., Tebbs, J., and McMahan, C. "Cost-effective surveillance for infectious diseases through specimen pooling and multiplex assays," Annual International Society for Disease Surveillance Conference, January 30, 2019; San Diego, CA.

16. Hitt, B., Bilder, C., Tebbs, J., and McMahan, C. "The optimal group size controversy for infectious disease testing: much ado about nothing?" Royal Statistical Society International Conference, September 6, 2018; Cardiff, Wales.

17. Tebbs, J., McMahan, C., and Bilder, C. "Pooling for simultaneous detection of Chlamydia trachomatis and Neisseria gonorrhoeae is cost efficient and accurate," STD Prevention Conference, August 29, 2018; Washington, DC.

18. Hitt, B., Bilder, C., Tebbs, J., and McMahan, C. "Optimal testing configurations for group testing," Joint Statistical Meetings, July 31, 2018; Vancouver, BC.

19. Hitt, B., Bilder, C., Tebbs, J., and McMahan, C. "Optimal group testing algorithms for infectious disease detection with the binGroup package," UseR! July 13, 2018; Brisbane, Australia.

20. Hou, P., Tebbs, J., Bilder, C., and McMahan, C. "Hierarchical group testing for multiple infections," International Biometric Conference, July 10, 2018; Barcelona, Spain.

21. Joyner, C., McMahan, C., Tebbs, J., and Bilder, C. "From mixed-effects modeling to spike and slab variable selection: A Bayesian regression model for group testing data," IBS ENAR Meeting, March 28, 2018; Atlanta, GA.

22. McMahan, C., Liu, Y., Tebbs, J., Bilder, C., and Gallagher, C. "A Bayesian generalized additive model for group testing data," IBS ENAR Meeting, March 26, 2018; Atlanta, GA.

23. Bilder, C., Tebbs, J., and McMahan, C. "Infectious disease detection using specimen pooling with multiplex assays when risk-factor information is present," IBS ENAR Meeting, March 25, 2018; Atlanta, GA.

24. Bilder, C., Tebbs, J., and McMahan, C. "Hierarchical group testing with multiplex assays in heterogeneous populations," Royal Statistical Society International Conference, September 6, 2017; Glasgow, Scotland.

25. Bilder, C., Tebbs, J., and McMahan, C. "Hierarchical group testing with multiplex assays in heterogeneous populations," Joint Conference on Biometrics & Biopharmaceutical Statistics, August 30, 2017; Vienna, Austria.

26. Bilder, C., Tebbs, J., and McMahan, C. "Informative group testing for multiplex assays," Joint Statistical Meetings, July 31, 2017; Baltimore, MD.

27. Tebbs, J., McMahan, C., Hanson, T., and Bilder, C. "Bayesian regression for group testing data," Conference on Applied Statistics in Agriculture, April 24, 2017; Manhattan, KS.

28. Mou, X., Tebbs, J., McMahan, C., and Bilder, C. "Back-end disease screening using information theory," IBS ENAR Meeting, March 15, 2017; Washington, DC.

29. Bilder, C., Tebbs, J., McMahan, C., and Hitt, B. "Optimal pool sizes for group testing," IBS ENAR Meeting, March 12, 2017; Washington, DC.

30. McMahan, C., Tebbs, J., and Bilder, C. "Bayesian regression of group testing data," IBS ENAR Meeting, March 12, 2017; Washington, DC.

31. Warasi, M., Tebbs, J., McMahan, C., and Bilder, C. "Using hierarchical group testing to estimate the prevalence of multiple diseases," IBS ENAR Meeting, March 12, 2017; Washington, DC.

32. Bilder, C., Tebbs, J., McMahan, C., and Hitt, B. "Objective functions for group testing," International Biometric Conference, July 15, 2016; Victoria, BC.

33. Hou, P., Tebbs, J., and Bilder, C. "Hierarchical group testing for multiple infections," IBS ENAR Meeting, March 17, 2015; Miami, FL. (Student travel award winning paper)

34. Bilder, C., Tebbs, J., and Black, M. "Multi-stage group testing with heterogeneous probabilities of disease positivity," WNAR/IMS Conference, June 18, 2014; Honolulu, HI.

35. Bilder, C. "Yes! Yes, but... NO!" New Investigator Luncheon, WNAR/IMS Conference, June 17, 2014; Honolulu, HI. http://chrisbilder.com/wnar.

36. Tebbs, J., McMahan, C., and Bilder, C., "Group testing for multiple infections with application to the Infertility Prevention Project," Joint Statistical Meetings, August 4, 2013; Montreal, QC.

37. McMahan, C., Tebbs, J., Hanson, T., and Bilder, C., "Bayesian regression models for group testing data," Joint Statistical Meetings, August 4, 2013; Montreal, QC.

38. Black, M., Bilder, C., and Tebbs, J. "Optimal retesting configurations for hierarchical group testing," Joint Statistical Meetings, August 4, 2013; Montreal, QC.

39. Koziol, N. and Bilder, C., "MRCV: a package for analyzing the association between two categorical variables with multiple response options," UseR! July 11, 2013; Albacete, Spain.

40. McMahan, C., Tebbs, J., and Bilder, C., "Regression models for group testing data with pool dilution effects," IBS ENAR Meeting, March 11, 2013; Orlando, FL.

41. Zhang, B., Bilder, C., and Tebbs, J. "Incorporating retests into group testing regression model estimation," Joint Statistical Meetings, July 29, 2012; San Diego, CA.

42. Chernyavskiy, P. and Bilder, C. "Ranking Bias in the USA Today Coaches Poll for the NCAA Football Bowl Subdivision," Joint Statistical Meetings, July 29, 2012; San Diego, CA.

43. Bilder, C., Zhang, B., and Tebbs, J., "Marginal regression models for multiple-disease group testing data," IBS ENAR Meeting, April 2, 2012; Washington, DC. https://youtu.be/OVLmrN-PwqM.

44. McMahan, C., Tebbs, J., and Bilder, C., "Two-dimensional informative array testing," IBS ENAR Meeting, April 2, 2012; Washington, DC.

45. McMahan, C., Tebbs, J., and Bilder, C., "Regression models for group testing data with pool dilution effects," IBS ENAR Meeting, April 1, 2012; Washington, DC.

46. Peng, Y., Tebbs, J., and Bilder, C., "Dorfman group screening with multiple infections," IBS ENAR Meeting, April 1, 2012; Washington, DC.

47. Bilder, C. and Tebbs, J., "Informative retesting procedures to assay high volume clinical specimens," World Statistics Congress of the International Statistical Institute, August 24, 2011; Dublin, Ireland.

48. Zhang, B., Bilder, C., and Tebbs, J. "Group testing regression models for multiple traits," Joint Statistical Meetings, August 2, 2011; Miami Beach, FL.

49. Bilder, C., Iwen, P., and Tebbs, J., "Alternative pooled testing procedures to evaluate high volume clinical specimens," Association of Public Health Laboratories Annual Meeting, June 6, 2011; Omaha, NE.

50. Bilder, C. and Tebbs, J., "Using pooled testing to screen heterogeneous populations," Thirteenth Biennial CDC Symposium on Statistical Methods, May 24, 2011; Decatur, GA.

51. McMahan, C., Tebbs, J., and Bilder, C. "Informative Dorfman screening," IBS ENAR Meeting, March 22, 2011; Miami, FL. (Student travel award winning paper)

52. Black, M., Bilder, C., and Tebbs, J. "Group testing in heterogeneous populations using halving algorithms," Joint Statistical Meetings, August 3, 2010; Vancouver, BC.

53. McMahan, C., Tebbs, J., and Bilder, C. "Informative array screening," Joint Statistical Meetings, August 2, 2010; Vancouver, BC.

54. Bilder, C., Zhang, B., Schaarschmidt, F., and Tebbs, J. "binGroup: a package for group testing," UseR!,July 21, 2010; Gaithersburg, MD.

55. Bilder, C., Tebbs, J., and Chen, P. "Informative retesting," Joint Statistical Meetings, August 4, 2009; Washington, DC.

56. Tebbs, J., Chen, P., and Bilder, C. "Inference for variance components in generalized linear mixed models for pooled binary response," IBS ENAR Meeting, March 18, 2009; San Antonio, TX.

57. Bilder, C. and Malone, C. "Tablet PC applications in statistics education, part I," Joint Statistical Meetings, August 5, 2008; Denver, CO. `https://youtu.be/fnhUk-A2WtY`.

58. Malone, C. and Bilder, C. "Tablet PC applications in statistics education, part II," Joint Statistical Meetings, August 5, 2008; Denver, CO.

59. Tebbs, J. and Bilder, C. "Informative screening," IBS ENAR Meeting, March 19, 2008; Washington, DC.

60. Bilder, C. and Loughin, T. "Estimation and testing for association with multiple-response categorical variables from complex surveys," Joint Statistical Meetings, July 30, 2007; Salt Lake City, UT.

61. Bilder, C. "Group testing model estimation and inference," Joint Statistical Meetings, August 8, 2005; Minneapolis, MN.

62. Bilder, C. and Tebbs, J. "Improved group testing estimation of trait prevalence," IBS ENAR Meeting, March 20, 2005; Austin, TX.

63. Stewart, S. and Bilder, C. "Probability models for 64-Team NCAA tournaments," Joint Statistical Meetings, August 12, 2004; Toronto, ON.

64. Bilder, C. and Tebbs, J. "Empirical Bayesian estimation of the disease transmission probability in multiple-vector-transfer designs," Joint Statistical Meetings, August 10, 2004; Toronto, ON.

65. Bilder, C. and Loughin, T. "Modeling two or more categorical variables that allow for multiple category choices," IBS ENAR Meeting, March 28, 2004; Pittsburgh, PA.

66. Bilder, C. and Loughin, T. "Strategies for modeling two categorical variables with multiple category choices," Joint Statistical Meetings, August 6, 2003; San Francisco, CA.

67. Tebbs, J. and Bilder, C. "Confidence interval procedures for the probability of disease transmission in multiple-vector-transfer designs," Joint Statistical Meetings, August 5, 2003; San Francisco, CA.

68. Tebbs, J. and Bilder, C. "New interval estimation procedures for the disease transmission probability in multiple-vector transfer designs," Conference on Applied Statistics in Agriculture, April 28, 2003; Manhattan, KS.

69. Bilder, C. and Loughin, T. "Testing for simultaneous pairwise marginal independence," Joint Statistical Meetings, August 12, 2002; New York, NY.

70. Bilder, C. and Loughin, T. "Testing for marginal independence between two categorical variables with multiple responses," IBS ENAR Meeting, March 19, 2002; Washington, DC.

71. Bilder, C. and Loughin, T. "Testing for conditional multiple marginal independence in the presence of pick any/c variables," Joint Statistical Meetings, August 7, 2001; Atlanta, GA.

72. Bilder, C. and Loughin, T. "Testing for conditional multiple marginal independence," IBS ENAR Meeting, March 26, 2001; Charlotte, NC. (Student travel award winning paper)

73. Bilder, C., Loughin, T., and Nettleton, D. "A comparison of multiple marginal independence testing methods," Joint Statistical Meetings, August 14, 2000; Indianapolis, IN.

74. Malone, C. and Bilder, C. "Increasing student-instructor and student-student interaction through a statistics course website," Joint Statistical Meetings, August 13, 2000; Indianapolis, IN.

75. Rumsey, D. and Bilder, C. "A statistics teaching and resource (STAR) library on the WWW," Joint Statistical Meetings, August 8, 1999; Baltimore, MD.

76. Malone, C. and Bilder, C. "Introductory statistics course websites: BEYOND syllabus.html," Midwest Conference on Teaching Statistics, June 26, 1999; Oshkosh, WI.

## PRESENTATIONS – SEMINAR

1. Bilder, C. "SARS-CoV-2 detection through group testing," Department of Statistics and Actuarial Science, Simon Fraser University, September 25, 2020; Burnaby, BC.

2. Bilder, C. "Group testing for efficient SARS-CoV-2 detection during the COVID-19 pandemic," Department of Statistics, Stanford University, July 7, 2020; Stanford, CA.

3. Bilder, C. "Infectious disease detection with multiplex assays and specimen pooling in array configurations," Department of Biostatistics, University of Nebraska Medical Center, February 28, 2020; Omaha, NE.

4. Bilder, C. "Informative group testing for multiplex assays," Webinar for the International Biometric Society Journal Club, June 13, 2019. http://youtu.be/aqcthjHeQqY.

5. Bilder, C. "What if❓," Department of Statistics and Actuarial Science, University of Iowa, March 14, 2019; Iowa City, IA.

6. Bilder, C. "What if❓," Department of Statistics, University of Nebraska-Lincoln, January 23, 2019; Lincoln, NE. http://youtu.be/lmiCjUIJq6w.

7. Bilder, C. "What if❓," Department of Statistics, Kansas State University, November 1, 2018; Manhattan, KS. http://youtu.be/rTjK_w0zvuw.

8. Bilder, C. "Decoding positive groups through halving," Department of Statistics, University of South Carolina, January 20, 2011; Columbia, SC. http://youtu.be/LS4PRLI5uCo.

9. Bilder, C. "Turning data into knowledge to solve sci-fi problems," Department of Statistics, University of Nebraska-Lincoln, September 2, 2009; Lincoln, NE. http://chrisbilder.com/bsg.

10. Bilder, C. "Human or Cylon? Group testing on the Battlestar Galactica to save humanity," Department of Statistics, Kansas State University, November 14, 2008; Manhattan, KS.

11. Bilder, C. "Human or Cylon? Group testing on the Battlestar Galactica," Department of Statistics, University of Missouri, October 5, 2007; Columbia, MO.

12. Bilder, C. and Loughin, T. "Modeling multiple-response categorical data from complex surveys," Washington Statistical Society, September 7, 2007; Washington, DC.

13. Bilder, C. "Modeling multiple-response categorical data from complex surveys," Department of Statistics, University of Nebraska-Lincoln, September 5, 2007; Lincoln, NE.

14. Bilder, C. "Teaching with a Tablet PC," Panelist, Instructional Technology Group, University of Nebraska-Lincoln, August 21, 2007; Lincoln, NE.

15. Bilder, C. "Cylon detection through group testing," Department of Statistics and Actuarial Science, Simon Fraser University, April 13, 2007; Burnaby, BC.

16. Bilder, C. "Rotate your world 180° using a Tablet PC," Instructional Technology Group, University of Nebraska-Lincoln, February 15, 2007; Lincoln, NE.

17. Bilder, C. "What kind of computer is that???" Department of Statistics, University of Nebraska-Lincoln, November 1, 2006; Lincoln, NE. http://youtu.be/pcuMHNVyExQ.

18. Bilder, C. "Just group it!" Department of Preventive and Societal Medicine and Department of Internal Medicine Section of Infectious Diseases, University of Nebraska Medical Center, November 17, 2005; Omaha, NE.

19. Bilder, C. "Modeling association between two or more multiple-response categorical variables," Department of Statistics, University of South Carolina, November 4, 2005; Columbia, SC.

20. Bilder, C. "Just group it!" Department of Statistics, University of Nebraska-Lincoln, September 7, 2005; Lincoln, NE.

21. Bilder, C. "Modeling association between two or more multiple-response categorical variables," Department of Statistics, University of Nebraska-Lincoln, September 8, 2004; Lincoln, NE.

22. Bilder, C. and Loughin, T. "Testing for marginal dependence between two or more multiple-response categorical variables," Third Annual Funding Opportunity in Survey and Statistical Research Seminar sponsored by the Federal Committee on Statistical Methodology, June 21, 2004; Washington, DC.

23. Bilder, C. and Tebbs, J. "Estimating the disease-transmission probability in multiple-vector-transfer designs," Oklahoma Chapter of the American Statistical Association, April 10, 2003; Stillwater, OK.

24. Bilder, C. "Testing for marginal independence between two or more multiple-response categorical variables," Department of Statistics, Kansas State University, March 13, 2003; Manhattan, KS.

25. Bilder, C. "Who wants to become an S-Plus user?" Department of Statistics, Oklahoma State University, October 4, 2001; Stillwater, OK.

26. Bilder, C. "Using a statistics course website for web-enhanced teaching," Department of Statistics, Oklahoma State University, April 10, 2001; Stillwater, OK.

27. Bilder, C. and Malone, C. "Statistics course web sites: BEYOND syllabus.html," Department of Statistics, Kansas State University, October 14, 1999; Manhattan, KS.

28. Bilder, C. "What's inside Sunny D juice containers?" Department of Statistics, Kansas State University, September 14, 1997; Manhattan, KS.

29. Bilder, C. "An introduction to S-Plus," Statistics Group, Idaho National Laboratory, July 15, 1997; Idaho Falls, ID.

30. Bilder, C. "So Chris, what did you do this summer?" Department of Statistics, Kansas State University, September 12, 1996; Manhattan, KS.

31. Bilder, C. "On August 26, Dr. Dallas Johnson will ask: 'So Chris, what did you do on your summer vacation?'" Biometrics and Data Management Department, Hoechst Marion Roussel, August 15, 1996; Kansas City, MO.

## PROFESSIONAL SERVICE

‣ Refereed papers for *American Statistician*; *Biometrics*; *Communications in Statistics: Simulation and Computation*; *Institute of Industrial Engineers Transactions*; *Journal of Acquired Immune Deficiency Syndromes*; *Journal of Agricultural, Biological, and Environmental Statistics*; *Journal of the American Medical Informatics Association*; *Journal of the American Statistical Association*; *Journal of the Royal Statistical Society: Series C*; *Journal of Statistics Education*; *The Lancet EClinicalMedicine*; *PLOS One*; *Statistica Sinica*; *Statistical Modelling*; and *Statistics in Medicine*
‣ Appointed to the Current Index to Statistics Management Committee (2014-2016)
‣ Organizer/chair of "Modern pooled testing methods" session at Joint Statistical Meetings in 2013
‣ External Examiner for PhD candidate at Victoria University of Wellington in 2009
‣ Appointed to the IBS ENAR Distinguished Student Paper Awards Committee (2007-2009)
‣ Elected Secretary/Treasurer of the ASA's Section on Statistics in Sports (2004-2006)
‣ Appointed to the IBS ENAR Regional Advisory Board (2003-2005)
‣ Appointed to the IBS ENAR Information Technology Oversight Committee (2001-2003)
‣ Served as an Advanced Placement Statistics Exam faculty consultant in 2002
‣ Chair of "New methods for the analysis of categorical data" session at 2001 IBS ENAR Meetings

‣ Co-Editor (2002-2003), Chief Associate Editor (2000-2002), and Webmaster (2000-2003) for the STAR Library; the STAR Library is now available through CAUSEweb

## COMPUTER EXPERIENCE

‣ Statistical: R, SAS
‣ Dynamic document creation: knitr
‣ Equation editor: MathType
‣ LaTeX: LyX, Beamer
‣ Microsoft Office: Excel, Outlook, PowerPoint, Publisher, Word
‣ Operating system: Windows, Linux
‣ Video: Camtasia Studio, Adobe Premiere
‣ Web conferencing: Skype, Zoom
‣ Website creation and management: Expression, FrontPage

## PROFESSIONAL MEMBERSHIPS

‣ American Statistical Association
‣ International Biometrics Society, Eastern North American Region