David J. Kahle, Ph.D.

CONTACT INFORMATION

Department of Statistical Science
Baylor University
One Bear Place #97140
Waco, Texas 76798, USA

Office (254) 710-6102
E-mail david.kahle@gmail.com
WWW   www.kahle.io

CITIZENSHIP

United States of America

RESEARCH INTERESTS

Statistical computing and graphics, algebraic statistics, Bayesian statistics, discrete multivariate analysis, statistical machine learning, pharmaceutical statistics

PROFESSIONAL EXPERIENCE

Associate Professor of Statistics   **August 2017 – Present**
Department of Statistical Science, **Baylor University**, Waco, Texas, USA

Assistant Professor of Statistics   **August 2011 – July 2017**
Department of Statistical Science, **Baylor University**, Waco, Texas, USA

EDUCATION

Rice University, Houston, Texas, USA

Doctor of Philosophy (Ph.D.), Statistics   **December 2011**
- Thesis :
  Minimum Distance Estimation in Categorical Conditional Independence Models
- Advisor : Prof. Javier Rojo
- Area of Study : Categorical data analysis, minimum distance estimation, conditional independence models, algebraic statistics

Master of Arts (M.A.), Statistics   **August 2006 – December 2010**

University of Richmond, Richmond, Virginia, USA

Bachelor of Arts (B.A.), Mathematics   **August 2003 – June 2006**

AWARDS

Professional
- Mike Kutner Junior Faculty Travel Award from the Southern Regional Council on Statistics, 2014, 2015.
- Travel Award from the Korean National Institute for Mathematical Science's (NIMS) Thematic Program on Applied Algebraic Geometry, Summer 2014.
- Recognition for outstanding performance in the classroom by the Alpha Chi Omega women's fraternity (Theta Iota Chapter), Fall 2013.
- Boyd Harshbarger Travel Award from the Southern Regional Council on Statistics, 2012.
- Wolfram Research's Mathematica Experts Live: One-Liner Competition 2012 Honorable Mention.

Graduate
- 2010 ggplot2 Case Study Competition grand prize winner. The case study demonstrated visualization methods for spatial data applied to understanding violent crime in downtown Houston, Texas.
- SACNAS Travel scholarship, 2008, 2009, 2010.
- George R. Brown Fellowship, 2008. Awarded by department for exceptional performance on qualifying exams.

Undergraduate
- [Joint Mathematics Meetings](#) Undergraduate Poster Session Winner, 2006.
- The National Dean's List, 2004, 2005, 2006.
- [COMAP](#) Mathematical Contest in Modeling Meritorious Ranking, 2005.
- [Golden Key International Honour Society](#)

PUBLISHED PEER REVIEWED ARTICLES

14. Kahle, D., R. Yoshida, and L. Garcia-Puente (2017). "Hybrid Schemes for Exact Conditional Inference in Discrete Exponential Families." *Annals of the Institute of Statistical Mathematics.* In press. Available here.

13. Casement, C. and D. Kahle (2017). "Graphical Prior Elicitation in Bernoulli and Poisson Models." *Communications in Statistics – Simulation and Computation.* In press. Available here.

12. Kahle, D. (2017). "Poisson Distribution." *The SAGE Encyclopedia of Educational Research, Measurement and Evaluation.* In press.

11. Kahle, D. (2017). "Bayesian Statistics." *The SAGE Encyclopedia of Educational Research, Measurement and Evaluation.* In press.

10. Mansell, A., D. Kahle, and D. Bellert (2017). "Calculating RRKM Rate Constants from Vibrational Frequencies and their Dynamic Interpretation." *The Mathematica Journal*, 19:1–20. Available here.

9. Young, P., D. Kahle, and D. Young (2017). "On the Independence of Singular Multivariate Skew-Normal Components." *Statistics & Probability Letters*, 122: 58–62. Available here.

8. Kahle, D., J. Stamey, F. Natanegara, K. Price, and B. Han (2016). "Facilitated Prior Elicitation with the Wolfram CDF." *Biometrics & Biostatistics International Journal*, 3(6):1–6. Available here.

7. Kahle, D., P. Young, B. Greer, and D. Young (2016). "Confidence Intervals for the Ratio of Two Poisson Rates Under One-Way Differential Misclassification Using Double Sampling." *Computational Statistics & Data Analysis*, 95: 122–132. Available here.

6. Wu, W., J. Stamey, and D. Kahle (2015). "A Bayesian Approach to Account for Misclassification and Overdispersion in Observational Count Data." *International Journal of Environmental Research and Public Health*, 12(9):10648–10661. Available here.

5. Sides, R., D. Kahle, and J. Stamey (2015). "Bayesian Sample Size Determination in Two-Sample Poisson Models." *Biometrics & Biostatistics International Journal*, 2(1):1–5. Available here.

4. Kahle, D. (2014). "Animating Statistics: A New Kind of Applet for Exploring Probability Distributions." *Journal of Statistics Education*, 20(2):1–12. Available here.

3. Kahle, D. (2013). "**mpoly**: Multivariate polynomials in R." *The R Journal*, 5(1): 162–170. Available here.

2. Kahle, D. and H. Wickham (2013). "**ggmap**: Spatial visualization with ggplot2." *The R Journal*, 5(1): 144–161. Available here.

1. Stein, R. M., B. Buzcu-Guven, L. Dueñas-Osorio, D. Subramanian, D. Kahle (2013). "How risk perceptions influence evacuations from hurricanes and compliance with government directives." *Policy Studies Journal*, 41(2): 319–342. Available here.

ARTICLES UNDER PEER REVIEW

Listings preceded with asterisks (*) indicate that the manuscript is currently in revision.

Kahle, D., C. O'Neill, and J. Sommars (2017). "A Computer Algebra System for R: Macaulay2 and the **m2r** Package." *Journal of Statistical Software.* Preprint here.

ARTICLES IN PREPARATION

Kahle, D. and J. Stamey (2017). "**invgamma**: The Inverse Gamma Distribution in R."

Kahle, D. (2017). "Seeing Diamonds: Statistical Graphics in the Introductory Course."

Blair, S., D. Kahle, and J. Seaman (2017). "A Tissot-Style Indicatrix for Visualizing Sensitivity in Prior Elicitation."

Kahle, D., R. Yoshida, and L. Garcia-Puente (2017). "**latter**: LattE and 4ti2 in R."

Casement, C. and D. Kahle (2017). "The Phoropter Method – A Stochastic Graphical Procedure for the Prior Elicitation."

Kahle, D., L. Garcia-Puente, and R. Yoshida (2017). "Algebraic Statistics in R with **algstat**: Markov Bases."

Kahle, D., J. Stamey, J. Seaman, K. Price, M. Sonksen, F. Natanegara, and others (2017). "**glmcmp**: Prior Elicitation and Conditional Means Priors in R."

BOOK CHAPTERS

Listings preceded with asterisks (*) indicate that the item is in preparation.

*Kahle, D. and M. Sonksen (2018). "Computational Tools" in *Bayesian Applications in Pharmaceutical Development*, eds. Fanni Natanegara (Eli Lilly & Company) and Mani Lakshminarayanan (Pfizer). Chapman & Hall/CRC Statistics.

BOOK REVIEWS

Listings preceded with asterisks (*) indicate that the item is in preparation.

*Kahle, D. (2017). "Book Review of *Statistical Rethinking: A Bayesian Course with Examples in R and Stan* by Richard McElreath (2015, CRC Press)." *Biometrics.*

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15. Gao, P., G. Innerst, D. Kahle, D. Kim, R. Yoshida, L. Zhang, and X. Zhang (2017). **tropical**: Tropical Geometry in R. R package version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.0.

14. Casement, C. and D. Kahle (2016–2017). Interactive Graphical Elicitation Tool. Shiny App available from ccasement.shinyapps.io/graphicalElicitation/ and version controlled with Git on GitHub. License : MIT.

13. Kahle, D. (2016–2017). **betalu**: The Beta Distribution with Support [l,u]. R package version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.

12. Kahle, D. (2016–2017). **dirchlet**: The Dirichlet Distribution. R package version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.

11. Kahle, D. (2016–2017). **chi**: The Chi Distribution. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.

10. Kahle, D. and J. Stamey (2016–2017). **invgamma**: The Inverse Gamma Distribution. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0, 0.1, and 1.0.

9. Kahle, D., C. O'Neill, and J. Sommars (2016–2017). **m2r**: Macaulay2 in R. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.0, 0.1.0, and 1.0.0.

8. Kahle, D., L. Garcia-Puente, and R. Yoshida (2016–2017). **latter**: LattE and 4ti2 in R. R package version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.

7. Baker, M., R. King, and D. Kahle (2015–2017). **TITAN2**: Threshold Indicator Taxa Analysis. R package distributed by CRAN. License : GPL-2. Maintained from version 2.1, CRAN genesis.

6. Kahle, D., J. Stamey, and R. Sides (2015–2017). **bayesRates**: Two-Sample Tests and Sample Size Determination from a Bayesian Perspective. R package version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0, and current version 1.0.

5. Kahle, D., P. Young, and D. Young (2014–2017). **poisDoubleSamp**: Confidence Intervals with Poisson Double Sampling. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0, 0.1, 1.0 and current version 0.1.

4. Kahle, D., L. Garcia-Puente, and R. Yoshida (2014–2017). **algstat**: Algebraic Statistics in R. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.0, 0.0.1, 0.0.2, 0.1.0, 0.1.1 and current version 1.0.0.

3. Kahle, D., J. Stamey, and J. Seaman (2013–2017). **glmcmp**: Prior Elicitation in Generalized Linear Models. Internal R package. License: Proprietary package of Eli Lilly & Company and Baylor University. Maintained through all versions—0.0, 1.0, 1.1, 1.2, 1.2.1, 1.2.2, 1.2.3, 1.3.0, 1.3.1, 1.3.2, 1.4, 1.5, 1.6, 1.6.1, 1.6.2 and current version 1.7.

2. Kahle, D. (2012–2017). **mpoly**: Symbolic computation and more with multivariate polynomials. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.0.1, 0.0.2, 0.0.3, 0.0.4, 0.0.5, 0.0.6, 0.1.0, 0.1.1, 1.0.0, 1.0.1, 1.0.2, and current version 1.0.3.

1. Kahle, D., H. Wickham (2011–2017). **ggmap**: Spatial Visualization with **ggplot2**. R package distributed by CRAN and version controlled with Git on GitHub. License : GPL-2. Maintained through all versions—0.7, 1.2, 1.3, 2.0, 2.1, 2.2, 2.3, 2.4, 2.5.2, 2.6, and current 2.6.1.

CONFERENCE PROCEEDINGS AND OTHER ARTICLES

Kahle, D, J. Stamey, and J. Seaman (2016). "An Introduction to **glmcmp**" A vignette for the **glmcmp** package, v.2.0. An internal document of Eli Lilly & Company and Baylor University, 16 pages.

Seaman Jr., J., J. Stamey, D. Kahle, and S. Blair (2016). "A Brief Guide to Bayesian Model Checking." An internal document of Eli Lilly & Company and Baylor University, 18 pages.

Seaman Jr., J., J. Stamey, S. Blair, and D. Kahle (2016). "Constructing a Prior on the Correlation Coefficient." An internal document of Eli Lilly & Company and Baylor University, 9 pages.

Baker, M., R. King, and D. Kahle (2015). "An Introduction to Threshold Indicator Taxa Analysis with **TITAN2** v2.1" A vignette for the **TITAN2** package, 18 pages.

Kahle, D, J. Stamey, and J. Seaman (2015). "An Introduction to **glmcmp** v1.5" A vignette for the **glmcmp** package. An internal document of Eli Lilly & Company and Baylor University, 18 pages.

Seaman Jr., J., J. Stamey, S. Blair, and D. Kahle (2015). "An Introduction to Bayesian Meta Analysis: Part I." An internal document of Eli Lilly & Company and Baylor University, 36 pages.

Seaman Jr., J., D. Kahle, J. Stamey, and S. Blair (2015). "Power Priors and Conditional Means Priors for Generalized Linear Models." An internal document of Eli Lilly & Company and Baylor University, 50 pages.

Seaman Jr., J., J. Stamey, and D. Kahle (2014). "A Brief Introduction to Bayesian Methods." An internal document of Eli Lilly & Company and Baylor University, 81 pages.

Kahle, D., J. Stamey, F. Natanegara, K. Price, and B. Han (2014). "Facilitated Prior Elicitation with the Wolfram CDF." In *JSM Proceedings*, Statistical Computing Section. Alexandria, Virginia: American Statistical Association.

Krey, K., E. Nolen, D. Kahle, D. Burton, J. Wise, and J. Singletary (2013). "Assessing the Impact of School Breakfast: A Study of Breakfast in the Classroom in Little Rock School District." December 2013 Final Report to funder No Kid Hungry Center for Best Practices by the Texas Hunger Initiative at the Baylor University School of Social Work. Listed as first contributor.

Krey, K., E. Nolen, D. Kahle, D. Burton, J. Wise, and J. Singletary (2013). "Assessing the Impact of School Breakfast: A Study of Breakfast in the Classroom in Dallas Independent School District." December 2013 Final Report to funder Dairy MAX by the Texas Hunger Initiative at the Baylor University School of Social Work. Listed as first contributor.

FUNDED RESEARCH   Titles preceded with asterisks (*) indicate that the project is currently under review.

17. Title :   *A Computer Algebra System for R: **m2r** through the Cloud with EC2
     PI(s) :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
               Christopher O'Neill, Ph.D. (Krener Asst. Prof., Math., UC Davis)
               Jeff Sommars (Grad. Student, Math., Stat., and C.S., U Illinois Chicago)
     Source : Amazon Web Services
     Amount : ≈$14,000   Period : 10/01/2017 – 09/30/2018

16. Title :   Science Driven Adaptive Program – Bayesian
     PI(s) :   John Seaman, Jr., Ph.D. (Prof., Stat. Sci., Baylor)
     Source : Eli Lilly & Company   Type : Contract
     Amount : $311,284   Period : 06/01/2017 – 05/31/2018
     Collab. : David Kahle, Ph.D. (Assoc. Prof., Stat. Sci., Baylor), funded
               James Stamey, Ph.D. (Prof., Stat. Sci., Baylor), funded

15. Title :   Applied Algebraic Statistics through R: Applications of LattE and 4ti2
     PI(s) :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
     Source : Baylor University *Undergraduate Research and Scholarly Activities
                  Program (URSA)*
     Amount : $3,200   Period : 06/01/2017 – 05/31/2018

14. Title : A Computer Algebra System for R: Macaulay2 and the **m2r** Package
    PI(s) : Christopher O'Neill, Ph.D. (Krener Asst. Prof., Math., UC Davis)
    Jeff Sommars (Grad. Student, Math., Stat., and C.S., U Illinois Chicago)
    David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
    Source : American Mathematical Society through the National Science Foundation
    Amount : $1,500   Period : 05/03/2017 – 05/07/2017

13. Title : A Computer Algebra System for R: Macaulay2 and the **m2r** Package
    PI(s) : Christopher O'Neill, Ph.D. (Krener Asst. Prof., Math., UC Davis)
    Jeff Sommars (Grad. Student, Math., Stat., and C.S., U Illinois Chicago)
    David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
    Source : American Mathematical Society through the National Science Foundation
    Amount : $1,500   Period : 11/09/2016 – 11/13/2016

12. Title : Collaborative Research: CDS&E: Applied Algebraic Statistics through R
    PI(s) : David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
    Source : National Science Foundation: Division of Mathematical Sciences
    Computational and Data-Enabled Science and Engineering in Mathematical
    and Statistical Sciences (CDS&E–MSS, PD 11-8069)
    Amount : $63,897   Period : 09/15/2016 – 07/31/2019
    Note : Collaborative proposal with Ruriko Yoshida, Ph.D.
    (Assoc. Prof., Op. Res., Naval Postgraduate School), $100,404

11. Title : Science Driven Adaptive Program – Bayesian
    PI(s) : John Seaman, Jr., Ph.D. (Prof., Stat. Sci., Baylor)
    Source : Eli Lilly & Company   Type : Contract
    Amount : $311,284   Period : 06/01/2016 – 05/31/2017
    Collab. : David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor), funded
    James Stamey, Ph.D. (Prof., Stat. Sci., Baylor), funded

10. Title : Mathematics Research Community 2016: Algebraic Statistics
    PI(s) : Matthias Drton, Ph.D. (Prof., Stat., Washington)
    Elizabeth Gross, Ph.D. (Asst. Prof., Math., San Jose State)
    Serkan Hoşten, Ph.D. (Prof., Math., San Francisco State)
    David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
    Sonya Petrović, Ph.D. (Asst. Prof., Appl. Math., IIT)
    Source : American Mathematical Society through the National Science Foundation
    Amount : Travel and accommodation for 40 graduate student, post-docs, and organizers
    Period : 06/12/2016 – 06/18/2016

9. Title : Science Driven Adaptive Program – Bayesian
    PI(s) : John Seaman, Jr., Ph.D. (Prof., Stat. Sci., Baylor)
    Source : Eli Lilly & Company   Type : Contract
    Amount : $311,284   Period : 06/01/2015 – 05/31/2016
    Collab. : David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor), funded
    James Stamey, Ph.D. (Prof., Stat. Sci., Baylor), funded

8. Title : Development and Training for **glmcmp** Software
    PI(s) : David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
    Source : Eli Lilly & Company   Type : Contract
    Amount : $22,575   Period : 01/01/2015 – 05/31/2015
    Collab. : John Seaman, Jr., Ph.D. (Prof., Stat. Sci., Baylor)
    James Stamey, Ph.D. (Prof., Stat. Sci., Baylor)

7.   Title :   Validation of Onsite Health Diagnostics Statistical Tool
     PI(s) :   James Stamey, Ph.D. (Prof., Stat. Sci., Baylor)
            David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
  Source :   Onsite Health Diagnostics   Type : Contract
 Amount : $4,500   Period : 01/01/2015 – 05/31/2015

6.   Title :   Accelerating Algebraic Statistics: A Fast Hybrid Scheme for Exact Inference
            in Log-Linear Models with CUDA
     PI(s) :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
  Source :   Nvidia Corporation
 Amount :   A hardware donation of a Tesla K40 GPU, valued at $3,000 – $4,000

5.   Title :   Effects of Universal Breakfast in the Classroom on Participation and Behavior
     PI(s) :   Jon Singletary, Ph.D. (Diana R. Garland Endowed Chair in Child and Family
              Studies, Baylor University School of Social Work)
  Source :   Share Our Strength   Role : Collaborator
 Amount : $50,000   Period : 01/01/2012 – 12/31/2013

4.   Title :   Effects of Universal Breakfast in the Classroom on Participation,
            Behavior and Flavored Milk Consumption
     PI(s) :   Jon Singletary, Ph.D. (Diana R. Garland Endowed Chair in Child and Family
              Studies, Baylor University School of Social Work)
  Source :   Dairy MAX, Inc.   Role : Collaborator
 Amount : $115,304   Period : 01/01/2012 – 12/31/2013

3.   Title :   Bayesian Methods for Pharmaceutical Statistics
     PI(s) :   John Seaman, Jr., Ph.D. (Prof., Stat. Sci., Baylor)
            James Stamey, Ph.D. (Prof., Stat. Sci., Baylor)
  Source :   Eli Lilly & Company   Type : Contract
 Amount : $200,000   Period : 02/01/2012 – 12/31/2014
  Collab. :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor), funded

2.   Title :   Facilitator : Interactive tools for Bayesian prior elicitation
     PI(s) :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
  Source :   Baylor University *College of Arts and Sciences Summer Sabbatical*
 Amount : $16,440   Period : 06/01/2013 – 07/31/2013

1.   Title :   Baylor University Interactive Statistics Modules (BaylorISMs)
     PI(s) :   David Kahle, Ph.D. (Asst. Prof., Stat. Sci., Baylor)
  Source :   Baylor University *Undergraduate Research and Scholarly Activities*
            Program (URSA)
 Amount : $5,000   Period : 06/01/2012 – 05/31/2013

INVITED
PRESENTATIONS

Kahle, D., C. O'Neill, and J. Sommars. "**m2r**: Macaulay2 in R." *AMS Special Session on Applicable and Computational Algebraic Geometry Central Section Fall Meeting*, University of North Texas, Denton, Texas, USA, September 9–10, 2017.

Kahle, D. "Algebraic Statistics in R – A State of the Union." *SIAM 2017 Conference on Applied Algebraic Geometry*, Georgia Tech, Atlanta, Georgia, USA, July 31–August 4, 2017. Slides available here.

Kahle, D. "An Introduction to Applied Algebraic Statistics through R." *Statistics Colloquium Lecture*, Baylor University, Waco, Texas, USA, October 6, 2016.

Kahle, D. "**glmcmp** 2.0: Conditional Means Priors in R" *Eli Lilly & Company Science Driven Adaptive Program (SDAP) online meeting on prior elicitation tools.* October 5, 2016.

Kahle, D. "Simple Algebraic Regression." *2016 Society for Industrial and Applied Mathematics (SIAM) Annual Meeting*, The Westin Boston Waterfront, Boston, Massachusetts, USA, July 11–15, 2016. Slides available here.

Kahle, D., R. Yoshida, and L. Garcia-Puente. "Applied Algebraic Statistics in R: The **algstat** Package." *2016 Mathematics Research Community*, Snowbird Ski and Summer Resort, Snowbird, Utah, USA, June 12–18, 2016.

Kahle, D. "Reflections on Big Data: What it is, why you should care, and why you shouldn't." *Baylor Undergraduate Research in Science and Technology (BURST)*, Baylor University, Waco, Texas, USA, November 19, 2015.

Kahle, D. and **M. Sonksen.** "Getting Started with **glmcmp**." *Eli Lilly & Company Bayesian Educational Training (BET) Forum online meeting.* September 25, 2015.

Kahle, D. and **M. Sonksen.** "Getting Started with **glmcmp**." *Eli Lilly & Company Bayesian Central Hub online meeting.* August 28, 2015.

Kahle, D. "**glmcmp** Nonlinear Programming." *Eli Lilly & Company Science Driven Adaptive Program (SDAP) online meeting on prior elicitation tools.* August 26, 2015.

Kahle, D., R. Yoshida, and L. Garcia-Puente. "Applied Algebraic Statistics in R with **algstat**." *SIAM 2015 Conference on Applied Algebraic Geometry*, National Institute for Mathematical Sciences, Daejeon, Hoseo, South Korea, August 3–7, 2015.

Kahle, D. "Recent Advances in Visualizing Spatial Data in R with **ggmap**." *45th Symposium on the Interface of Computing Science and Statistics: Data Science*, Waterfront Place Hotel, Morgantown, West Virginia, USA, June 10–13, 2015. Slides available here.

Kahle, D. and **J. Stamey.** "Reference Priors in **glmcmp**." *Eli Lilly & Company Science Driven Adaptive Program (SDAP) online meeting.* April 17, 2015.

Kahle, D. and **J. Stamey.** "Induced Priors on Unelicited Scenarios: Preliminary results for a hypothetical pilot study." *Eli Lilly & Company Science Driven Adaptive Program (SDAP) online meeting.* February 20, 2015.

Seaman Jr., J., **J. Stamey**, and **D. Kahle**. "A Brief Introduction to Bayesian Methods." Eli Lilly & Company, Indianapolis, Indiana, USA, November 18, 2014.

Kahle, D. and **J. Stamey.** "Logistic Regression with Conditional Means Priors and **glmcmp**." *Eli Lilly & Company Science Driven Adaptive Program (SDAP) online meeting.* June 27, 2014.

Kahle, D. "**algstat**: Algebraic Statistics for the Masses." University of Kentucky, Lexington, Kentucky, USA, September 11, 2014. Slides available here.

Kahle, D. and L. Garcia-Puente. "Algebraic Statistics in R: Discrete Multivariate Analysis and the **algstat** Package." *Southern Regional Council on Statistics Summer Research Conference*, Hotel Galvez, Galveston, Texas, USA, June 1–4, 2014. Poster available here.

Kahle, D. "Can you see me now? A consumers' guide to data visualization." *Together at the Table: Hunger Summit at Baylor University*, Baylor University, Waco, Texas, USA, October 24–25, 2013. Slides available here.

Kahle, D. "Introducing Algebraic Statistics." Stephen F. Austin State University, Nacogdoches, Texas, USA, October 7, 2013.

Kahle, D. "Introducing Algebraic Statistics." *Southern Regional Council on Statistics Summer Research Conference*, Montgomery Bell State Park, Burns, Tennessee, USA, June 2–5, 2013. Slides available here.

Kahle, D. "The Grammar of Graphics and Spatial Visualization in R." *Sam Houston State University*, Huntsville, Texas, USA, October 3, 2012. Slides available here.

Kahle, D. "The Algebraic Side of Contingency Tables." *2012 Conference of Texas Statisticians*, Lamar University, Beaumont, Texas, March 3, 2012. Slides available here.

Bold denotes presenter.

Innerst, G., D. Kim, P. Gao, and D. Kahle. "MCMC Strategies to Enhance Exact Conditional Inference for Discrete Exponential Families." *2017 Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Diversity in STEM Conference*, Salt Palace Convention Center, Salt Lake City, Utah, USA, October 19 – 21, 2017.

Kim, D., P. Gao, G. Innerst, and D. Kahle. "Accelerating Exact Conditional Inference in Discrete Exponential Family Models." *2017 Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Diversity in STEM Conference*, Salt Palace Convention Center, Salt Lake City, Utah, USA, October 19 – 21, 2017.

Kahle, D., J. Stamey, M. Sonksen, and K. Price. "**glmcmp**: Prior Elicitation in R." *2017 Joint Statistical Meetings. Topic Contributed Session : What do the Experts Believe? Leveraging expert knowledge to develop robust informative priors to aid decision making in drug and medical device development*, Baltimore Convention Center, Baltimore, Maryland, USA, July 29 – August 3, 2017.

Casement, C. and D. Kahle. "Lineup-Style Methods for Graphical Prior Elicitation." *2016 Conference of Texas Statisticians*, Trinity University, San Antonio, Texas, USA, April 8–9, 2016. (Award: Best Interdisciplinary Poster)

Casement, C. and D. Kahle. "Prior Elicitation via a Rorschach-Style Graphical Procedure." *2016 Eastern North American Meetings (ENAR) of the International Biometric Society*, JW Marriott, Austin, Texas, USA, March 6–9, 2016. (Poster)

Blair, S., D. Kahle, and J. Seaman. "Sensitivity in Prior Elicitation." *2016 Eastern North American Meetings (ENAR) of the International Biometric Society*, JW Marriott, Austin, Texas, USA, March 6–9, 2016. (Poster)

Garcia-Puente, L. and D. Kahle. "**AlgStat**: An R package for algebraic statistics." *Algebraic Statistics 2015*, Università degli Studi di Genova, Genoa, Italy, June 8–11, 2015. (Tutorial)

Young, P., D. Kahle, and D. Young. "Confidence Intervals for the Ratio of Two Poisson Rates Under Differential Misclassification Using Double Sampling." *Southern Regional Council on Statistics Summer Research Conference*, Courtyard Marriott, Carolina Beach, North Carolina, USA, June 7–10, 2015. (Poster)

Kahle, D., R. Yoshida, and L. Garcia-Puente. "Sampling From Discrete Exponential Families Conditional on Their Sufficient Statistics." *Southern Regional Council on Statistics Summer Research Conference*, Courtyard Marriott, Carolina Beach, North Carolina, USA, June 7–10, 2015. (Poster)

Garcia-Puente, L. and D. Kahle. "**AlgStat**: An R package for algebraic statistics." *Joint Workshop on Limit Theorems and Algebraic Statistics*, Institute of Information Theory and Automation, Academy of Sciences of the Czech Republic, Prague, Czech

Republic, August 25–29, 2014.

Cheng, J., D. Kahle, and J. Seaman. "Eliciting Informative Priors for Bayesian Hurdle Models." *2014 Joint Statistical Meetings : Global Impact - Past, Present, and Future*, Boston Convention and Exhibition Center, Boston, Massachusetts, USA, August 2–7, 2014. (Poster)

Kahle, D. and L. Garcia-Puente. "Algebraic Statistics in R: Markov Bases." *2014 NIMS Thematic Program on Applied Algebraic Geometry: Algebraic Statistics*, National Institute for Mathematical Sciences, Daejeon, Hoseo, South Korea, July 14–17, 2014.

Garcia-Puente, L. and D. Kahle. "Markov bases for noncommutative Fourier analysis of partially ranked data." *as2014: Algebraic Statistics Conference*, Illinois Institute of Technology, Chicago, Illinois, USA, May 19–22, 2014.

Kahle, D. "Visualizing Big Data in the Introductory Course." *The Second Biennial Electronic Conference on Teaching Statistics (eCOTS)*, Online, May 19–23, 2014. (Screencast recording)

Cheng, J., D. Kahle, and J. Seaman. "Eliciting Priors for Hurdle Models with Shared Covariates." *Women in Statistics Conference*, Embassy Suites, Cary, North Carolina, USA, March 15–17, 2014. (Poster)

Cheng, J., J. Seaman, and D. Kahle. "Priors for Bayesian Hurdle Models." *2014 Eastern North American Meetings (ENAR) of the International Biometric Society*, Baltimore Marriott Waterfront, Baltimore, Maryland, USA, March 16–19, 2014. (Poster)

Kahle, D., J. Stamey, K. Price, F. Natanegara, and B. Han. "Advances in Facilitated Prior Elicitation." *2013 Joint Statistical Meetings. Topic Contributed Session : Bayesian Computations: Challenges, Solutions, and Implementations in Medical Product Development*, Palais des Congrès de Montréal, Montréal, Québec, Canada, August 3–8, 2013. Slides available here.

Garcia-Puente, L. and D. Kahle. "Identifiability of Structural Equation Models on 6 Random Variables." *2013 Society for Industrial and Applied Mathematics (SIAM) Conference on Applied Algebraic Geometry*, Colorado State University, Fort Collins, Colorado, USA, August 1–4, 2013.

Warnick, R. and D. Kahle. "Interactive Modules as Tools for Illustrating Statistical Concepts." *2013 URSA Scholars' Week*, Baylor University, Waco, Texas, USA, April 8–11, 2013.

Warnick, R. and D. Kahle. "Interactive Modules as Tools for Illustrating Statistical Concepts." *2013 American Statistical Association Conference on Statistical Practice*, Sheraton New Orleans Hotel, New Orleans, Louisiana, USA, February 21-?23, 2013. (Poster)

Kahle, D. and H. Wickham. "**ggmap**: Interfacing ggplot2 and RgoogleMaps." *The 8th International R Users Meeting*, Vanderbilt University, Nashville, Tennessee, USA, June 12-15, 2012. Slides available here.

Kahle, D. "**mpoly**: Multivariate polynomials in R." *Algebraic Statistics in the Alleghenies*, The Pennsylvania State University, University Park, Pennsylvania, USA, May 16–18, 2012. (Poster)

Kahle, D. and H. Wickham. "**ggmap**: Spatial visualization with ggplot2." *Southern Regional Council on Statistics Summer Research Conference*, Jekyll Island, Georgia, USA, June 2–6, 2012. (Poster)

Kahle, D. "**mpoly**: Multivariate polynomials in R." *43rd Symposium on the Interface of Computing Science and Statistics: Future of Statistical Computing: Internet Scale Data, Flexible Modeling, and Visualization*, Rice University, Houston, Texas, USA, May 16–18, 2012. Slides available here.

Guven, B., **L. Dueñas-Osorio**, R. M. Stein, D. Subramanian, J. Salazar, and D. Kahle. "Storm Risk Calculator for the City of Houston." *Presentation before the City of Houston Office of Emergency Management* , City Hall, Houston, Texas, USA, May 3, 2012.

Guven, B., L. Dueñas-Osorio, R. M. Stein, D. Subramanian, and D. Kahle. "Storm Risk Calculator for the City of Houston." *2012 National Hurricane Conference*, Orlando, Florida, USA, March 26–29, 2012.

Kahle, D., L. Dueñas-Osorio, D. Subramanian, and R. M. Stein. "A Comparison of Hurricane Induced Power Outage Models : Component vs. Statistical Models." *2011 National Hurricane Conference*, Atlanta, Georgia, USA, April 18–22, 2011.

Kahle, D. "Minimum Distance Estimation for Contingency Table Models." *2010 Society for the Advancement of Chicanos and Native Americans in Science (SACNAS) National Conference*, Anaheim, California, USA, September 29 – October 3, 2010. (Poster)

Kahle, D. "Advances in Contingency Table Model Estimation." *2010 Pan-American Advanced Studies Institute : Cutting-edge Topics in Theoretical Statistics and Applications in Genetics and Bioinformatics*, Centro de Investigación en Matemáticas, Guanajuato, Mexico, May 2–8, 2010. (Poster)

Kahle, D. "Computational Survival Analysis with R." *2006 Pan-American Advanced Studies Institute : Mathematical Models in Population Dynamics*, Universidad de El Salvador (UES), San Salvador, El Salvador, February 24–26, 2010.

Kahle, D. and D. Homrighausen. "An Investigation into Statistical Tests for Stochastic Dominance with Applications to Economic Decision Theory." *2006 Joint Mathematics Meetings*, San Antonio, Texas, USA, January 12–15, 2006. (Poster)

Kahle, D. and D. Homrighausen. "An Investigation into Statistical Tests for Stochastic Dominance with Applications to Economic Decision Theory." *2005 Shenandoah Undergraduate Mathematics and Statistics Conference*, James Madison University, Harrisonburg, Virginia, USA, November 12, 2005.

Doctoral
Students
Advised

Innerst, Grant. "TBD." Expected May 2019. Currently working on problems in algebraic statistics.

Casement, Chris. "Graphical Methods in Prior Elicitation." June 2017. Currently Assistant Professor (Tenure-Track) in the Department of Mathematics and Computer Science at Drew University.

Blair, Somer. "Contributions to the Theory and Practice of Prior Elicitation in Biopharmaceutical Research." February 2017. Currently at Javelin Marketing Group, Dallas, Texas. Co-advised with John Seaman, Jr., Ph.D.

Wu, Wenqi (Robin). "Network Meta-Analysis with Rare Events and Misclassified Response." April 2016. Currently at GM Financial, Dallas, Texas. Co-advised with James Stamey, Ph.D.

Cheng, Joyce. "Bayesian Methods for Hurdle Models." February 2015. Currently at the U.S. Food and Drug Administration, Washington D.C. Co-advised with John Seaman, Jr., Ph.D.

Sides, Ryan A. "Sample Size Determination for Two Sample Binomial and Poisson Data Models Based on Bayesian Decision Theory." August 2013. Currently at Eli Lilly and Company, Indianapolis, Indiana. Co-advised with James Stamey, Ph.D.

<table>
<tr><td>PROFESSIONAL
SERVICE</td><td>

Service at Professional Gatherings
Sessions at meetings (O = organized, C = chaired, J = poster competition judge)

1. "Software and Computation in Algebraic Statistics I", *SIAM 2017 Conference on Applied Algebraic Geometry*, Georgia Institute of Technology, Atlanta, Georgia, July 31–August 4, 2017. (OC; with Elizabeth Gross)

2. "Software and Computation in Algebraic Statistics II", *SIAM 2017 Conference on Applied Algebraic Geometry*, Georgia Institute of Technology, Atlanta, Georgia, July 31–August 4, 2017. (OC; with Elizabeth Gross)

3. *2017 Joint Mathematical Meetings*, Atlanta, Georgia, January 4–7, 2017. (J)

4. "Markov Bases and their Applications in Statistics I", *SIAM 2015 Conference on Applied Algebraic Geometry*, National Institute for Mathematical Sciences, Daejeon, Hoseo, South Korea, August 3–7, 2015. (OC; with Ruriko Yoshida)

5. "Markov Bases and their Applications in Statistics II", *SIAM 2015 Conference on Applied Algebraic Geometry*, National Institute for Mathematical Sciences, Daejeon, Hoseo, South Korea, August 3–7, 2015. (OC; with Ruriko Yoshida)

6. *2015 Southern Regional Council of Statistics (SRCOS) Summer Research Conference*, Carolina Beach, North Carolina, June 7–10, 2015. (J)

7. *2013 Conference of Texas Statisticians*, Rice University, Houston, Texas, March 22–23, 2013. (J)

Service with Peer-Reviewed Journals
Associate Editor of   **August 2014 – March 2017**
Biometrics & Biostatistics International Journal

Book reviewer for Biometrics

Ad hoc reviewer for
- Journal of Statistical Software
- The R Journal
- Pharmaceutical Statistics
- The American Mathematical Monthly
- The American Statistician

Service with Publishers
Wiley Science Advisors for John Wiley & Sons, Inc.   **May 2010 – January 2017**
- Responsibilities include providing opinions on new devices and technologies, the "Generation Y" scientific community, and literature research preferences.

Student Advisory Board for John Wiley & Sons, Inc.   **June 2009 – Dec 2011**
- Responsibilities include providing opinions on publishing decisions, market feedback, and technology usage.

</td></tr>
<tr><td>ACADEMIC
EXPERIENCE</td><td>

Baylor University, Waco, Texas, USA

Assistant Professor of Statistical Science   **August 2011 – Present**
- Teaching, research/creative activity, University and community service, direction of undergraduate and graduate students, and other related duties pertaining to advancing the mission of Baylor University.

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</table>

Rice University, Houston, Texas, USA

Graduate Research Assistant **Fall 2009, August 2010 – May 2011**
- Working with a highly interdisciplinary team modeling hurricane risk and designing evacuation policies for Houston. The team includes faculty members from Political Science, Computer Science, and Civil and Environmental Engineering.

Graduate Research Assistant **January 2009 – December 2009**
- Investigated questions of tail behavior and tail categorization of probability laws.

Graduate Research Assistant **August 2006 – May 2007**
- Investigated normalization and peak detection of mass spectrometry proteomic data (SELDI-TOF) for child osteosarcoma studies. This was a collaborative effort with Texas Children's Hospital in the Texas Medical Center.

Undergraduate Researcher **Summer 2004, Summer 2005**
- Participated in the Rice University Summer Institute of Statistics (RUSIS), 2004. Investigated imputation methods for missing data in microarray experiments.
- ——, 2005. Investigated power in hypothesis tests of stochastic dominance.

TEACHING EXPERIENCE

Baylor University, Waco, Texas, USA

Assistant/Associate Professor **Fall 2011 – Present**
- STA 2381 – Introductory Statistical Methods
- STA 4373 – Computational Methods in Statistics
- STA 6360 – Computational Statistics
- STA 6352 – Bayesian Theory
- STA 6360 – Bayesian Methods for Data Analysis

Rice University, Houston, Texas, USA

Instructor **Summer 2008, Summer 2009, Summer 2010**
- Designed, authored, and presented 3-hour daily labs and lectures in statistical computing and graphics for the statistics research experience for undergraduates (REU) the Rice University Summer Institute of Statistics (RUSIS). Provided computational and theoretical support for students' research projects.

Teaching Assistant **August 2007 – December 2008**
- Provided in class and out of class support for undergraduate and first-year graduate mathematical statistics courses.
- Assisted in the development of an undergraduate calculus-based statistics course emphasizing civil and environmental engineering.
- Graded daily assignments.

University of Richmond, Richmond, Virginia, USA

Peer Academic Skills Tutor Supervisor **August 2005 – June 2006**
- Tutored students and managed the Academic Skills Center.

Peer Academic Skills Tutor **August 2004 – August 2005**
- Tutored students in general study skills as well as mathematics and French.

PROFESSIONAL AFFILIATIONS	American Statistical Association (ASA) — Statistical Computing and Statistical Graphics Section — Statistical Education Section Institute of Mathematical Statistics (IMS) Mathematical Association of America (MAA) American Mathematical Society (AMS) Society for Industrial and Applied Mathematics (SIAM) — Activity Group on Algebraic Geometry (SIAG^2)

UNIVERSITY
SERVICE

Baylor University, Waco, Texas, USA

Student Life and Services Committee   **August 2017 – July 2020**

Other Service

- Undergraduate Research and Scholarly Achievement (URSA) grant reviewer, 2015–2016, 2016–2017

DEPARTMENTAL
AND
UNIVERSITY
ACADEMIC
SERVICE

Baylor University, Waco, Texas, USA

Undergraduate major capstone experience committees

2013 — Allison Hainline

Master's oral examinations

2011 — Forest Williamson
2012 — Yuanyuan Guo, Victoria Romberg, Amy Buros, Joyce Cheng, Caleb Stein, Kristen Tecson
2013 — Soo Park, Justin Sims
2014 — Matt Seale
2015 — Morgan McCreary
2016 — Andy Lawler, Courtney Weber, Allan Hill, Grant Innerst
2017 — Divya Lakshminarayanan, Austin Workman

Master's thesis proposals

2013 — Martin Schwed (geology)
2015 — Gift Ntuli (geology), Kenton Shaw (geology)

Master's defense committees

2014 — Martin Schwed (geology)
2016 — Ran Duan (economics), Kenton Shaw (geology), Gift Ntuli (geology)

Dissertation proposals

2011 — Ross Bray
2012 — Forest Williamson, Yuanyuan Guo, Ryan Sides, Jack Knorr
2013 — Kristen Tecson
2014 — Wenqi Wu, Wencong Chen, Somer Blair
2015 — Jonathon Vallejo, RJ Waken, Qi (Kate) Zhou, Hannah Mejia (geology)
2016 — Chris Casement, Youjiao (Gary) Yu, Stephen Cook (biology), James Parker (geology)
2017 — Chris Elrod, Grant Innerst

Ph.D. defense committees

2012 — Stephanie Doherty, Brandi Falley
2013 — Ryan Sides, John Beeson

2014 — Forrest Williamson
2015 — Joyce Cheng, Kristen Tecson, Michelle Marcovitz, Yuanyuan Guo
2016 — Mark Eschmann, Wenqi (Robin) Wu, Jonathon Vallejo
2017 — Somer Blair, Tyler Nelson, Chris Casement, Madeline Drevets, Gabriel Odom

Post-doctoral mentorship

2014–2015 — Phil Young (jointly)

TECHNICAL COMPETENCIES

Extensive experience with stochastic simulation, data visualization, and R package development.

Programming: R (including R Markdown and Shiny app development), Wolfram (Mathematica), (Win/Open)BUGS, STAN, Bash, C++; basic experience with CUDA C++, html, css, JavaScript, Java, SAS

Version Control: Git, GitHub user @dkahle

Applications: RStudio, TEX / LATEX / BIBTEX, Vim, Apple Productivity Apps (Pages, Keynote, Numbers), XCode, Microsoft Office, Camtasia

Operating Systems: MacOS, Microsoft Windows, and standard Linux distributions – Ubuntu, Debian, Kali