

# Kenneth Joseph Ryan

Department of Statistics  
West Virginia University

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**Citizenship:** U.S.A.

**Fellow of the American Statistical Association:** Awarded 2020

## Education

Ph.D. Statistics	Iowa State University	2001
M.S. Statistics	Iowa State University	1999
B.S. Mathematics and Chemistry	Millikin University	1996
H.S.D.	Lincoln-Way Central H.S., New Lenox, IL	1992

## Academic Experience

Professor	West Virginia University (WVU)	2017-
Associate Professor	WVU	2012-2017
Associate Professor	Bowling Green State University (BGSU)	2010-2012
Assistant Professor	BGSU Dept. of App. Stat. and OR (ASOR)	2006-2010
NSF Postdoctoral Fellow	University of Illinois at Chicago (UIC)	2002-2003
Lecturer	Northwestern University (NU)	2001-2002
Graduate Assistant	Iowa State University (ISU)	1997-2001

## Other Professional Experience

Manager	Information Resources Incorporated	2004-2006
Statistician	Allstate Insurance Company	2003-2004
Graduate Research Assistant	Los Alamos National Laboratory (LANL)	2000

## Articles

24. **Ryan, K.J.**, Brydon, M.S., Leatherman, E.R., and Hamada, M.S., "Analysis of overlapping count data," *Communications in Statistics-Simulation and Computation*, published online 2022.
23. Bulutoglu, D.A., Chatterjee, K., Georgiou, S.D., Koukouvinos, C., **Ryan, K.J.**, and Stylianou, S. (2021), "Unbalanced two-symbol  $E(s^2)$  optimal designs," *Statistics and Applications*, 19, 1, 11-28.
22. Culp, M.V., **Ryan, K.J.**, Banerjee, P., and Morehead, M. (2019), "On data integration problems with manifolds," *Technometrics*, 61, 2, 165-175.
21. Geyer, A.J., Bulutoglu, D.A., and **Ryan, K.J.** (2019), "Finding the symmetry group of an LP with equality constraints and its application to classifying orthogonal arrays," *Discrete Optimization*, 32, 93-119.
20. Culp, S.L., **Ryan, K.J.**, Chen, J., and Hamada, M.S. (2018), "Analysis of repeatability and reproducibility studies with ordinal measurements," *Technometrics*, 60, 4, 545-556.
19. Bulutoglu, D.A. and **Ryan, K.J.** (2018), "Integer programming for classifying orthogonal arrays," *Australasian Journal of Combinatorics*, 70, 3, 362-385.

18. Gunel, E. and **Ryan, K.J.** (2017), "Fisher's exact test from a Bayes perspective," *Communications in Statistics-Simulation and Computation*, 46, 9, 7393-7404.
17. **Ryan, K.J.**, Hamada, M.S., and Vardeman, S.B. (2017), "Estimating a service-life distribution based on production counts and a failure database," *JQT*, 49, 2, 172-185.
16. Hamada, M.S. and **Ryan, K.J.** (2016), "Combined analysis of overlapping stratified random sample and simple random sample data," *Q&REI*, 32, 309-314.
15. Hamada, M.S. and **Ryan, K.J.** (2016), "The analysis of misclassified ordinal data from designed experiments," *Q&REI*, 32, 223-229.
14. Bulutoglu, D.A. and **Ryan, K.J.** (2015), "Algorithms for finding generalized minimum aberration designs," *Journal of complexity*, 31, 577-589.
13. **Ryan, K.J.** and Culp M.V. (2015), "On semi-supervised linear regression in covariate shift problems," *JMLR*, 16, 3183-3217.
12. **Ryan, K.J.** and Hamada, M.S. (2015), "Qualification testing with paired within-part samples," *Quality engineering*, 27, 473-476.
11. Culp, M.V. and **Ryan, K.J.** (2013), "Joint harmonic functions and their supervised connections," *JMLR*, 14, 3721-3752.
10. **Ryan, K.J.**, Hamada, M.S., and Reese, C.S. (2011), "A Bayesian hierarchical power law process model with application to supercomputer reliability," *JQT*, 43, 3, 209-223.
9. **Ryan, K.J.** and Bulutoglu, D.A. (2010), "Minimum aberration fractional factorial designs with large  $N$ ," *Technometrics*, 52, 2, 250-255.
8. Bulutoglu, D.A. and **Ryan, K.J.** (2009), " $D$ -Optimal and near  $D$ -optimal  $2^k$  fractional factorial designs of resolution  $V$ ," *JSPI*, 139, 16-22.
7. **Ryan, K.J.** (2009), "Approximate confidence intervals for  $p$  when double sampling," *TAS*, 63, 132-140.
6. Bulutoglu, D.A. and **Ryan, K.J.** (2008), " $E(s^2)$ -Optimal supersaturated designs with good minimax properties when  $N$  is odd," *JSPI*, 138, 1754-1762.
5. **Ryan, K.J.** and Bulutoglu, D.A. (2007), " $E(s^2)$ -Optimal supersaturated designs with good minimax properties," *JSPI*, 137, 2250-2262.
4. Miescke, K.J. and **Ryan, K.J.** (2006), "On Gupta's subset selection rule," *JSPI*, 136, 2004-2019.
3. Reese, C.S., Wilson, A.G., Hamada, M., Martz, H.F., and **Ryan, K.J.** (2004), "Integrated analysis of computer and physical experiments," *Technometrics*, 46, 2, 153-164.
2. **Ryan, K.J.** (2003), "Estimating expected information gains for experimental designs with application to the random fatigue-limit model," *JCGS*, 12, 3, 585-603.
1. **Ryan, K.J.** (2003), "Some flexible families of intensities for nonhomogeneous Poisson process models and their Bayes inference," *Q&REI*, 19, 171-181.

## Book Related

3. Culp, **Ryan, K.J.**, and Michailidis (2018), "Semi-supervised smoothing for large data problems," In Härdle et al., *Handbook of Big Data Analytics*, Springer, 285-299.
2. Banerjee, Culp, **Ryan, K.J.**, and Michailidis (2017), "Graph-based semi-supervised learning with big data," In Saha et al., *Handbook of Research on Applied Cybernetics and System Science*, IGI, 154-185.
1. **Ryan, K.J.** (2012), "Data clustering in C++," *The American statistician* (Book Review), 66, 4.

## Consulting

6. Glover, Hadfield, Boney, Foltz, Holáskova, **Ryan, K.J.**, and Mortiz (2018), “Effects of environment, feed form, and caloric density on energy partitioning,” *The Journal of Applied Poultry Research*, 27, 507-521
5. Banerjee, Syed, Helmick, Culp, **Ryan, K.J.**, and Cukic (2017), “Automated triaging of very large bug repositories,” *Information and Software Technology*, 89, 1-13.
4. Konnai, Scherer, Peplinski, and **Ryan, K.J.** (2017), “Whisper and phonation: Aerodynamic comparisons across adduction and loudness,” *Journal of Voice*, 31, 6, 773.e11-20.
3. Ott, Dacks, **Ryan, K.J.**, and Rio (2016), “A tale of transmission: *Aeromonas veronii* activity within leach-exuded mucus,” *Applied and Environmental Microbiology*, 82, 9, 2644-2655.
2. Amarachintha, **Ryan, K.J.**, Cayer, Boudreau, Johnson, and Heckman (2015), “Effect of Cdc42 domains on filopodia sensing, cell orientation, and haptotaxis,” *Cellular signalling*, 27, 683-693.
1. Sharma, Vanderhalf, **Ryan, K.J.**, and Sclafani (2010), “Refining IV iron use in hemodialysis patients: A post-DRIVE analysis,” *Nephrology news & issues*, 4, 22-35.

## Grant Proposals and Funding

18. NSF “Semi-supervised learning.” PI 7/20-6/23, not funded, \$451,744. (All dollar amounts are that requested or funded for my task.)
17. NSF “Semi-supervised learning extensions.” PI 7/19-6/22, not funded \$424,406.
16. NSF “Practical semi-supervised learning with theoretical justification.” PI 7/17-6/20, not funded \$190,313.
15. NSF “A practical suite of semi-supervised learners with theoretical justification.” PI 7/16-6/19, not funded \$193,487.
14. WVU Eberly College Summer Grants for Course Development “Group-based interactive labs for STAT 211,” summer 2016, funded \$3,600.
13. CITeR “Validating the representativeness of samples from sequestered biometric data sets Phase II,” co-PI 7/15-7/16, funded \$14,895.
12. NSF “Extending semi-supervised linear regression to the generalized linear model.” PI 7/15-6/18, not funded \$189,472.
11. CITeR “Validating the representativeness of samples from sequestered biometric data sets,” co-PI 7/14-7/15, funded \$17,500.
10. U.S. Department of Justice grant 2010-DDBX-0161 on Big Data research with application to “Automated triage of problem reports,” co-PI summer 2013, funded \$14,167.
9. CoBRE cancer center grant, statistical consultant 2013,2014, funded  $\approx$ \$8,000.
8. LANL Statistical Sciences Group CCS-6 summer research visits, travel reimbursement plus a \$750/week honorarium for 1 or 2 weeks per year for 10 years since 2008.
7. Air Force Office of Scientific Research (AFOSR) grants, paid \$117,219 over summers 2007-2016 by PI Dursun A. Bulutoglu to collaborate on DOE research.
6. BGSU Faculty Research Council Research Incentive Grant “Exact algorithms for finding efficient designs,” 2009-2010, funded \$9,268.
5. AFOSR “Heuristic algorithms and exact bounds for finding GMA designs,” with PI Dursun A. Bulutoglu, 2009, not funded (\$97,097).

4. BGSU Business College Summer Research Grants 2009 and 2007, each funded \$5,000.
3. OH Supercomputer Center “Minimum aberration fractional factorial designs with large  $N$ ,” 2009, awarded a major research account of 30,000 resource units.
2. BGSU Graduate Dean Competitive Graduate Assistantship Pool essay format application, funded \$9,926 for a 1/2 time AY08-09 research assistant (RA).
1. First Solar Incorporated-BGSU 1/4 Time RAs. Two S09 RAs funded \$11,176. One AY09-10 RA funded \$11,258. One F10 RA funded \$5,645.

### **Service to Profession**

Associate Editor (AE), *Statistical Analysis and Data Mining*, 2019-2020  
 AE, *Technometrics*, 2016-2018 (full 3-year term with residual work beyond 2018)  
 Refereed 87 papers for journals including *JASA* (33 as AE)  
 Organized and chaired a session on reliability, SRC 2012, Cambridge, MA  
 Officer, ASA Northwest Ohio Local Chapter, F08-S12  
 Helped organize the DAE 2003 conference, Chicago, IL

### **Teaching**

STAT 210 (Introductory Statistics for the Social Sciences), NU: 3 quarters (S02 most recent)  
 STAT 211 (Elementary Statistical Inference), WVU: 1 semester (F16 most recent)  
 STAT 212 (Elementary Statistical Methods II), BGSU: 9 (F11)  
 STAT 215 (Introduction to Probability and Statistics), WVU: 2 (F17)  
 STAT 227 (Introduction to Business Statistics), ISU: 5 (S01)  
 STAT 312 (Intermediate Statistical Methods), WVU: 2 (F19)  
 IENG 314 (Advanced Analysis of Engineering Data), WVU: 2 (F17)  
 STAT 381 (Applied Statistical Methods), UIC: 3 (F03)  
 STAT 445 (Data Analysis), WVU: 5 (F21)  
 STAT 461 (Theory of Probability), WVU: 9 (F22)  
 STAT 462 (Theory of Statistics), WVU: 8 (S23)  
 STAT 502 (Regression Analysis), BGSU: 5 (F11)  
 STAT 512 (Statistical Methods 2), WVU: 5 (F14)  
 STAT 513 (Design of Experiments), WVU: 7 (S22)  
 STAT 516 (Time Series Analysis), BGSU: 6 (S12)  
 STAT 601 (Statistics for Managerial Decisions), BGSU: 2 (S11)  
 STAT 696 (Graduate Seminar), WVU: 1 (F15)

### **Advising**

Committee chair Juan Chen, Ph.D. in Computational Statistics (completed 2017)  
 Committee member for 2 additional completed Ph.D.s  
 Mentored (many) undergraduate and M.S. in Statistics students  
     Involved in capstones in Mathematics and M.S. in Statistics problem reports  
     Many students went onto successful careers in industry including Disneyland  
     Some went on for a Ph.D. in Statistics at highly-competitive programs including CMU

**Personal:** Married with two children

**Statistic:** Seven home runs as a college baseball player

**Last Update:** January 2023