

Joseph E. Cavanaugh

College of Public Health Curriculum Vitae

Department of Biostatistics

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March 2026

Educational and Professional History

Degrees Earned

1986	BS in Mathematics, Montana Tech
1986	BS in Computer Science, Montana Tech
1988	MS in Statistics, Montana State University
1993	PhD in Statistics, University of California, Davis

Employment History

1986 - 1988	Summer Staff Research Assistant, Los Alamos National Laboratory
1986 - 1988	Graduate Teaching Assistant, Montana State University
1990	Summer Staff Research Assistant, Los Alamos National Laboratory
1988 - 1993	Associate-In/Graduate Teaching Assistant, University of California, Davis
1991 - 1993	Graduate Research Assistant, University of California, Davis
1993 - 1998	Assistant Professor, University of Missouri-Columbia
1998 - 1999	Assistant Professor and Director of Graduate Studies, University of Missouri-Columbia
1999 - 2000	Associate Professor, University of Missouri-Columbia
2000 - 2003	Associate Professor and Director of Undergraduate Studies, University of Missouri-Columbia
2003 - 2008	Associate Professor, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
2003 - 2008	Associate Professor, Department of Statistics and Actuarial Science, University of Iowa, Iowa City, Iowa
2003 - 2009	Associate Director, Biostatistics for the University of Iowa Center on Aging, Iowa City, Iowa
2014 - 2015	Interim Departmental Executive Officer, Department of Biostatistics, University of Iowa, College of Public Health, Iowa City, Iowa
2012 - 2015	Director of Graduate Studies in Biostatistics, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa
2008 - Present	Professor, Department of Biostatistics, College of Public Health, University of Iowa, Iowa City, Iowa

2008 - Present	Professor, Department of Statistics and Actuarial Science, University of Iowa, Iowa City, Iowa
2012 - Present	Biostatistician and Executive Committee Member, UI Injury Prevention Center, Iowa City, Iowa
2012 - Present	Biostatistician, UI Institute for Clinical and Translational Research, Research Education, Training, and Career Development Key Function, Iowa City, Iowa
2014 - Present	Professor, Applied Mathematical and Computational Sciences, University of Iowa, Graduate College
2015 - Present	Departmental Executive Officer, Department of Biostatistics, University of Iowa, College of Public Health, Iowa City, Iowa

Honors and Awards

1986	Highest Scholastic Standing in the Arts and Sciences, Montana Tech
1986	Valedictorian, Montana Tech
1992	Teaching Award for Outstanding Graduate Students, University of California, Davis
1994	Montana Tech Alumni Recognition Award, Montana Tech
1997	Provost Outstanding Junior Faculty Teaching Award, University of Missouri-Columbia
1998	Gold Chalk Award (for the training and mentoring of graduate students), University of Missouri-Columbia
1999	Outstanding Reviewer, Editorial Board of Automatica
2000	William T. Kemper Fellowship for Excellence in Teaching, University of Missouri-Columbia
2001	SPES Outstanding Presentation Award. Paper: Self-similarity index estimation via wavelets for locally self-similar processes (with Y. Wang and C. Song), American Statistical Association Section on Physical and Engineering Sciences
2001 - 2002	Albert Winemiller Prize for Outstanding Developments in New Statistical Methodology for an Applied Setting. Paper: Time series analysis of shapes using the complex normal distribution (with A. Micheas) (\$500)
2006	Faculty Award for Teaching (\$2000), College of Public Health, University of Iowa
2008	SPES Outstanding Presentation Award. Paper: State-space discrimination and clustering of atmospheric time series data based on Kullback information measures (with T. Bengtsson), American Statistical Association Section on Physical and Engineering Sciences
2013	CPH Faculty Service Award, University of Iowa College of Public Health
2013	The Chancellor's Medallion awarded to a graduate who has made significant academic-related contributions, Montana Tech of The University of Montana
2017	University of Iowa Hancher-Finkbine Medallion, University of Iowa, Iowa City, Iowa
2019	CPH Faculty Mentoring Award, College of Public Health, The University of Iowa, Iowa City, Iowa
2021	Together with Ryan Peterson (PhD, 2019) received the 2020 Best Paper Prize for the article "Ordered Quantile Normalization: A Semi-Parametric Transformation Built for the Cross-Validation Era", Journal of Applied Statistics

2022	2022 CPH Distinguished Faculty Lecturer, College of Public Health, Iowa City Lecture on November 2, 2022
2023	Regents Award for Faculty Excellence, University of Iowa College of Public Health, Iowa City, Iowa
2014 - Present	Fellow of the American Statistical Association, American Statistical Association
2019 - Present	Elected Member of the International Statistical Institute

Teaching

Course Teaching

University of Iowa

Spring 2004	Analysis of Categorical Data, 171:262, Credit Hours: 3, Enr: 9, Percent of Course: 100.0%
Fall 2004	Advanced Biostatistics Seminar: Generalized Linear Models, 171:290, Credit Hours: 3, Enr: 7, Percent of Course: 100.0%
Spring 2005	Advanced Biostatistics Seminar: Model Selection, 171:290, Credit Hours: 1, Enr: 9, Percent of Course: 100.0%
Fall 2005	Introduction to Biostatistics, 171:161:001, Credit Hours: 3, Enr: 124, Percent of Course: 100.0%
Spring 2006	Analysis of Categorical Data, 171:262, Credit Hours: 3, Enr: 17, Percent of Course: 100.0%
Spring 2007	Advanced Biostatistics Seminar: Generalized Linear Models, 171:290, Credit Hours: 3, Enr: 5, Percent of Course: 100.0%
Spring 2008	Analysis of Categorical Data, 171:262, Credit Hours: 3, Enr: 14, Percent of Course: 100.0%
Fall 2008	Introduction to Biostatistics, 171:161:001, Credit Hours: 3, Enr: 88, Percent of Course: 100.0%
Spring 2009	Introduction to Biostatistics, 171:161:001, Credit Hours: 3, Enr: 74, Percent of Course: 100.0%
Fall 2009	Advanced Biostatistics Seminar, 171:290:001, Credit Hours: 2, Enr: 19, Percent of Course: 100.0%
Spring 2010	Analysis of Categorical Data, 171:262:001
Spring 2010	Research in Biostatistics, 171:295:012
Spring 2010	Thesis/Dissertation, 171:300:012
Summer 2010	Independent Study in Biostatistics, 171:281:012
Fall 2010	Biostatistical Methods I, 171:201:AAA
Fall 2010	Independent Study in Biostatistics, 171:281:012
Fall 2010	Preceptorship in Biostatistics, 171:280:012
Fall 2010	Thesis/Dissertation, 171:300:012
Spring 2011	Independent Study in Biostatistics, 171:281:012

Spring 2011	Thesis/Dissertation, 171:300:012
Summer 2011	Thesis/Dissertation, 171:300:012
Fall 2011	Biostatistical Methods I, 171:201:AAA
Fall 2011	Thesis/Dissertation, 171:300:012
Spring 2012	Thesis/Dissertation, 171:300:130
Spring 2012	Analysis of Categorical Data, 171:262:001
Spring 2012	Preceptorship in Biostatistics, 171:280:130
Summer 2012	Independent Study in Biostatistics, 171:281:130
Summer 2012	Preceptorship in Biostatistics, 171:280:130
Summer 2012	Thesis/Dissertation, 171:300:130
Fall 2012	Advanced Biostatistics Seminar, 171:290:002
Fall 2012	Preceptorship in Biostatistics, 171:280:130
Fall 2012	Thesis/Dissertation, 171:300:130
Spring 2013	Independent Study in Biostatistics, 171:281:130
Spring 2013	Preceptorship in Biostatistics, 171:280:130
Spring 2013	Thesis/Dissertation, 171:300:130
Fall 2013	Thesis/Dissertation, 171:300:130
Spring 2014	Analysis of Categorical Data, 171:262:001
Spring 2014	Independent Study in Biostatistics, 171:281:130
Spring 2014	Thesis/Dissertation, 171:300:130
Summer 2014	Introduction to Biostatistics, 171:161:001
Summer 2014	Preceptorship in Biostatistics, 171:280:012
Fall 2014	Advanced Biostatistics Seminar, BIOS:7600:0002
Fall 2014	Independent Study in Biostatistics, BIOS:7800:0130
Fall 2014	Preceptorship in Biostatistics, BIOS:7500:0130
Fall 2014	Thesis/Dissertation, BIOS:7900:0130
Spring 2015	Independent Study in Biostatistics, BIOS:7800:0130
Spring 2015	Thesis/Dissertation, BIOS:7900:0130
Summer 2015	Introduction to Biostatistics, BIOS:5110:0001
Summer 2015	Thesis/Dissertation, BIOS:7900:0012
Fall 2015	Research Data Management, BIOS:5310:0001, Credit Hours: 3, Enr: 26
Fall 2015	Research Data Management, STAT:5810:0001, Credit Hours: 3, Enr: 26
Fall 2015	Thesis/Dissertation, BIOS:7900:0130, Percent of Course: 100.0%
Fall 2015	Reading and Research, AMCS:7990:0007, Percent of Course: 100.0%
Spring 2016	Analysis of Categorical Data, BIOS:7410:0001, Credit Hours: 3, Enr: 18, Percent of Course: 100.0%

Spring 2016 Analysis of Categorical Data, STAT:7510:0001, Credit Hours: 3, Enr: 17

Spring 2016 Thesis/Dissertation, BIOS:7900:0130, Percent of Course: 100.0%

Summer 2016 Independent Study in Biostatistics, BIOS:7800:2536, Percent of Course: 100.0%

Summer 2016 Introduction to Biostatistics, BIOS:4120:1, Percent of Course: 3.0%

Summer 2016 Reading and Research, AMCS:7990:2190, Percent of Course: 100.0%

Summer 2016 Thesis/Dissertation, BIOS:7900:2195, Percent of Course: 100.0%

Fall 2016 Advanced Biostatistics Seminar, BIOS:7600:0003, Enr: 15, Percent of Course: 100.0%
1,2

Fall 2016 Preceptorship in Biostatistics, BIOS:7500:2350, Percent of Course: 100.0%

Fall 2016 Thesis/Dissertation, BIOS:7900:2196, Percent of Course: 100.0%

Spring 2017 Thesis/Dissertation, BIOS:7900:4912, Percent of Course: 100.0%

Fall 2017 Preceptorship in Biostatistics, BIOS:7500:6882, Percent of Course: 100.0%

Fall 2017 Thesis/Dissertation, BIOS:7900:7631, Percent of Course: 100.0%

Spring 2018 Analysis of Categorical Data, BIOS:7410:0001, Credit Hours: 3, Enr: 18, Percent of Course: 100.0%

Spring 2018 Thesis/Dissertation, BIOS:7900:8703, Percent of Course: 100.0%

Summer 2018 Thesis/Dissertation, BIOS:7900:1672, Percent of Course: 100.0%

Fall 2018 Advanced Biostatistics Seminar, BIOS:7600:0002, Enr: 14
1,2

Fall 2018 Thesis/Dissertation, BIOS:7900:1750, Enr: 2, Percent of Course: 100.0%

Spring 2019 Thesis/Dissertation, BIOS:7900:4037, Enr: 2, Percent of Course: 100.0%

Summer 2019 Thesis/Dissertation, BIOS:7900:5516, Enr: 1, Percent of Course: 100.0%

Fall 2019 Preceptorship in Biostatistics, BIOS:7500:6835, Enr: 1, Percent of Course: 100.0%

Fall 2019 Thesis/Dissertation, BIOS:7900:6694, Enr: 1, Percent of Course: 100.0%

Spring 2020 Analysis of Categorical Data, BIOS:7410:0001, Credit Hours: 3, Enr: 16, Percent of Course: 100.0%

Spring 2020 Independent Study in Biostatistics, BIOS:7800:8301, Enr: 1, Percent of Course: 100.0%

Spring 2020 Preceptorship in Biostatistics, BIOS:7500:7692, Enr: 2, Percent of Course: 100.0%

Spring 2020 Thesis/Dissertation, BIOS:7900:7991, Enr: 1, Percent of Course: 100.0%

Fall 2020 Advanced Biostatistics Seminar, BIOS:7600:0002, Credit Hours: 2, Enr: 19, Percent of Course: 100.0%

Fall 2020 Independent Study in Biostatistics, BIOS:7800:0709, Enr: 1, Percent of Course: 100.0%

Fall 2020 Preceptorship in Biostatistics, BIOS:7500:1067, Enr: 1, Percent of Course: 100.0%

Spring 2021 Thesis/Dissertation, BIOS:7900:2014, Enr: 1, Percent of Course: 100.0%

Spring 2022 Analysis of Categorical Data, BIOS:7410:0001, Credit Hours: 3, Enr: 7, Percent of Course: 100.0%

Fall 2022	Advanced Biostatistics Seminar, BIOS:7600:0002, Credit Hours: 2, Enr: 19, Percent of Course: 100.0%
Spring 2024	Analysis of Categorical Data, BIOS:7410:0001, Credit Hours: 3, Enr: 10, Percent of Course: 100.0%
Fall 2024	Advanced Biostatistics Seminar, BIOS:7600:0002, Credit Hours: 2, Enr: 18, Percent of Course: 100.0%
Spring 2026	Analysis of Categorical Data, 171:262, Credit Hours: 3, Enr: 7, Percent of Course: 100.0%
Spring 2026	Independent Study in Biostatistics, BIOS:7800:2709, Credit Hours: ARR, Enr: 1, Percent of Course: 100.0%
Spring 2026	Research in Biostatistics, BIOS:7850:2519, Credit Hours: ARR, Enr: 1, Percent of Course: 100.0%

Other Institutions

Elementary Statistics, STAT:1300:***, Montana State University
Role: Primary Instructor

Elementary Statistics, STAT:1300:***, University of California, Davis
Role: Primary Instructor

Linear Algebra for Business, ***:***:***, Montana State University
Role: Primary Instructor

Linear Models I, ***:***:***, University of Missouri-Columbia
Role: Primary Instructor

Linear Models II, ***:***:***, University of Missouri-Columbia
Role: Primary Instructor

Probability Modeling & Statistical Inference, ***:***:***, University of California, Davis
Role: Primary Instructor

Advanced Linear Models, STAT:9320:***, University of Missouri-Columbia

Applied Time Series Analysis, STAT:4870:***, University of Missouri-Columbia

Categorical Data Analysis, STAT:4830:***, University of Missouri-Columbia

Elementary Statistics (Honors), STAT:1300H:***, University of Missouri-Columbia

Introduction to Mathematical Statistics, STAT:4710:***, University of Missouri-Columbia

Statistical Analysis, STAT:4110:***, University of Missouri-Columbia

Statistical Methods in Natural Resources, STAT:2530:***, University of Missouri-Columbia

Survey of Calculus, M:161Q:***, Montana State University

Regression Analysis, STA:108:***, University of California, Davis

Scholarship/Professional Productivity

Publications or creative works

Peer-reviewed papers and journal articles

1. Huang, Y., Palaniappan, K., Zhuang, X. & **Cavanaugh, J. E.** (1995). Optic flow field segmentation and motion estimation using a robust genetic partitioning algorithm. *IEEE Transactions on Pattern Analysis and Machine Intelligence* 17 1177-1190.
2. **Cavanaugh, J. E.** & Shumway, R. H. (1996). On computing the expected Fisher information matrix for state-space model parameters. *Statistics & Probability Letters* 26 347-355.
3. Neath, A. A. & **Cavanaugh, J. E.** (1997). Regression and time series model selection using variants of the Schwarz information criterion. *Communications in Statistics – Theory and Methods* 26 559-580.
4. **Cavanaugh, J. E.** (1997). Unifying the derivations of the Akaike and corrected Akaike information criteria. *Statistics & Probability Letters* 33 201-208.
5. **Cavanaugh, J. E.** & Shumway, R. H. (1997). A bootstrap variant of AIC for state-space model selection. *Statistica Sinica* 7 473-496.
6. **Cavanaugh, J. E.** & Shumway, R. H. (1998). An Akaike information criterion for model selection in the presence of incomplete data. *Journal of Statistical Planning and Inference* 67 45-65.
7. Bradley, J. S., Phillips, J. O., **Cavanaugh, J. E.** & Metzler, M. H. (1998). The clinical utility of pH paper versus pH meter in the measurement of critical gastric pH in stress ulcer prophylaxis. *Critical Care Medicine* 26 1905-1909. [PMID: 9824087](#).
8. **Cavanaugh, J. E.** & Johnson, W. O. (1999). Assessing the predictive influence of cases in a state-space process. *Biometrika* 86 183-190.
9. **Cavanaugh, J. E.** & Neath, A. A. (1999). Generalizing the derivation of the Schwarz information criterion. *Communications in Statistics – Theory and Methods* 28 49-66.
10. **Cavanaugh, J. E.** (1999). A large-sample model selection criterion based on Kullback's symmetric divergence. *Statistics & Probability Letters* 44 333-344.
11. Neath, A. A. & **Cavanaugh, J. E.** (2000). A regression model selection criterion based on bootstrap bumping for use with resistant fitting. *Computational Statistics and Data Analysis* 35 155-169.
12. Wang, Y., **Cavanaugh, J. E.** & Song, C. (2001). Self-similarity index estimation via wavelets for locally self-similar processes. *Journal of Statistical Planning and Inference* 99 91-110.
13. **Cavanaugh, J. E.** & Oleson, J. J. (2001). A diagnostic for assessing the influence of cases on the prediction of missing data. *Journal of the Royal Statistical Society* 50 427-440.
14. **Cavanaugh, J. E.** (2004). Criteria for linear model selection based on Kullback's symmetric divergence. *Australian and New Zealand Journal of Statistics* 46 257-274.
15. Ferguson, A. C., Davis, C. H. & **Cavanaugh, J. E.** (2004). An autoregressive model for analysis of ice sheet elevation change time series. *IEEE Transactions on Geoscience and Remote Sensing* 42 2426-2436.
16. Davies, S. L., Neath, A. A. & **Cavanaugh, J. E.** (2005). Cross-validation model selection criteria for linear regression based on the Kullback-Leibler discrepancy. *Statistical Methodology* 2 246-266.
17. Kim, H. J. & **Cavanaugh, J. E.** (2005). Model selection criteria based on Kullback information measures for nonlinear regression. *Journal of Statistical Planning and Inference* 134 332-349.
18. **Cavanaugh, J. E.** & Shang, J. (2005). A diagnostic for assessing the influence of cases on the prediction of random effects in a mixed model. *Journal of Data Science* 3 137-151.
19. Neath, A. A. & **Cavanaugh, J. E.** (2006). A Bayesian approach to the multiple comparisons problem. *Journal of Data Science* 4 131-146.
20. Neath, A. A. & **Cavanaugh, J. E.** (2006). Bayesian estimation of linear statistical model bias. *International Journal of Pure and Applied Mathematics* 32 255-264.

21. Bengtsson, T. & **Cavanaugh, J. E.** (2006). An improved Akaike information criterion for state-space model selection. *Computational Statistics and Data Analysis* 50 2635-2654.
22. Davies, S. L., Neath, A. A. & **Cavanaugh, J. E.** (2006). Estimation optimality of corrected AIC and modified Cp in linear regression. *International Statistical Review* 74 161-168.
23. Hong, L., Levy, S. M., Warren, J. J., Broffitt, B. & **Cavanaugh, J. E.** (2006). Fluoride intake levels in relation to fluorosis development in maxillary central incisors and first molars. *Caries Research* 40 (6) 494-500. [PMID: 17063020.](#)
24. Kuntz, J. L., **Cavanaugh, J. E.**, Becker, L. K., Ward, M. A., Appelgate, D. M., Herwaldt, L. A. & Polgreen, P. M. (2007). Clostridium difficile-associated disease among patients in a small rural hospital. *Infection Control and Hospital Epidemiology* 28 1236-1239. [PMID: 17926273.](#)
25. Broffitt, B., Levy, S. M., Warren, J. J. & **Cavanaugh, J. E.** (2007). An investigation of bottled water use and caries in the mixed dentition. *Journal of Public Health Dentistry* 67 151-158. [PMID: 17899900.](#)
26. Lu, X., Pingel, L. C., Burnell, K. K., **Cavanaugh, J. E.** & Brogden, K. A. (2007). Carbamoylcholine chloride induces a rapid elevated IL-6 response in the nasal cavity of C57BL/6 mice. *Comparative Medicine* 57 (4) 350-355. [PMID: 17803048.](#)
27. Fethke, N. B., Anton, D. C., **Cavanaugh, J. E.**, Gerr, F. & Cook, T. M. (2007). Bootstrap exploration of surface electromyography sampling duration and exposure estimate precision. *Scandinavian Journal of Work, Environment and Health* 33 358-367. [PMID: 17973062.](#)
28. Tiesman, H., Zwerling, C., Peek-Asa, C., Sprince, N. & **Cavanaugh, J. E.** (2007). Nonfatal injuries among urban and rural residents: the National Health Interview Survey. *Injury Prevention* 13 (2) 115-119. [PMID: 17446252.](#) [PMCID: PMC2610578.](#)
29. Polgreen, P. M., Chen, Y., **Cavanaugh, J. E.**, Ward, M., Coffman, S., Hornick, D. B., Diekema, D. J. & Herwaldt, L. A. (2007). An outbreak of severe Clostridium difficile-associated disease possibly related to inappropriate antimicrobial therapy for community-acquired pneumonia. *Infection Control and Hospital Epidemiology* 28 212-214. [PMID: 17265406.](#)
30. Pingel, L. C., Kohlgraf, K. G., Hansen, C. J., Estman, C. G., Dietrich, D. E., Burnell, K. K., Srikantha, R. N., Xiao, X., Belanger, M., Progulske, A., **Cavanaugh, J. E.**, Guthmiller, J. M., Johnson, G. K., Joly, S. A., Kurago, Z. B., Dawson, D. V. & Brogden, K. A. (2008). Human β -defensin 3 binds to hemagglutinin B (rHagB), a non-fimbrial adhesion from Porphyromonas gingivalis, and attenuates a pro-inflammatory cytokine response. *Immunology and Cell Biology* 86 (8) 643-649. [PMID: 18711400.](#)
31. Shang, J. & **Cavanaugh, J. E.** (2008). An assumption for the development of bootstrap variants of the Akaike information criterion in mixed models. *Statistics and Probability Letters* 78 1422-1429.
32. Polgreen, P. M., Chen, Y., Beckmann, S., Srinivasan, A., Neill, M. A., Gay, T. & **Cavanaugh, J. E.** (2008). Elements of influenza vaccination programs that predict higher vaccination rates: Results of an Emerging Infections Network survey. *Clinical Infectious Diseases* 46 (1) 14-19. [PMID: 18171207.](#)
33. Shang, J., **Cavanaugh, J. E.** & Wright, F. T. (2008). A Bayesian multiple comparison procedure for order-restricted mixed models. *International Statistical Review* 76 268-284.
34. Polgreen, P. M., Septimus, E. J., Parry, M. F., Beekman, S. E., **Cavanaugh, J. E.**, Srinivasan, A. & Talbot, T. R. (2008). Relationship of influenza vaccination declination statements and influenza vaccination rates for healthcare workers in 22 US hospitals. *Infection Control and Hospital Epidemiology* 29 (7) 675-677. [PMID: 18564904.](#)
35. Kuntz, J. L., Holley, S., Helms, C., **Cavanaugh, J. E.**, Vandeberg, J., Herwaldt, L. A. & Polgreen, P. M. (2008). Use of a pandemic preparedness drill to increase rates of influenza vaccination among healthcare workers. *Infection Control and Hospital Epidemiology* 29 111-115. [PMID: 18179365.](#)
36. Polgreen, P. M., Bohnett, L. C., **Cavanaugh, J. E.**, Gingerich, S. B., Desjardin, L. E., Harris, M. L., Quinlisk, M. P. & Pentella, M. A. (2008). The duration of mumps shedding following the onset of symptoms. *Clinical Infectious Diseases* 46 (9) 1447-1449. [PMID: 18419451.](#)
37. Bengtsson, T. & **Cavanaugh, J. E.** (2008). State-space discrimination and clustering of atmospheric time series data based on Kullback information measures. *Environmetrics* 19 103-121.

38. Burr, T., Fry, H., McVey, B., Sander, E., **Cavanaugh, J.** & Neath, A. (2008). Performance of variable selection methods in regression using variations of the Bayesian information criterion. *Communications in Statistics – Simulation and Computation* 37 507-520.
39. Shang, J. & **Cavanaugh, J. E.** (2008). Bootstrap variants of the Akaike information criterion for mixed model selection. *Computational Statistics and Data Analysis* 52 2004-2021.
40. Kaskie, B. K., Gregory, D. & **Cavanaugh, J. E.** (2008). The use of public mental health services by older Californians and complementary service system effects. *Journal of Behavioral Health Sciences & Research* 35 (2) 142-157. [PMID: 18181023.](#)
41. Kaskie, B., Imhof, S., **Cavanaugh, J. E.** & Culp, K. (2008). Civic engagement as a retirement role for aging Americans. *The Gerontologist* 48 (3) 368-377. [PMID: 18591362.](#)
42. Warren, J. J., Levy, S. M., Broffitt, B., **Cavanaugh, J. E.**, Kanellis, M. J. & Weber-Gasparoni, K. (2009). Considerations on optimal fluoride intake using dental fluorosis and dental caries outcomes – A longitudinal study. *Journal of Public Health Dentistry* 69 (2) 111-115. [PMID: 19054310.](#)
43. Neath, A. A. & **Cavanaugh, J. E.** (2010). Bayesian estimation of prediction error and variable selection in linear regression. *International Statistical Review* 78 (2) 257-270.
44. Kuntz, J. L., Yang, M., **Cavanaugh, J.**, Atlas, A. F. & Polgreen, P. M. (2010). Trends in Clostridium difficile infection among peripartum women. *Infection Control and Hospital Epidemiology* 31 (5) 532-534. [PMID: 20350150.](#)
45. Dawson, J. D., **Cavanaugh, J. E.**, Zamba, K. D. & Rizzo, M. (2010). Modeling lateral control in driving studies. *Accident Analysis & Prevention* 42 (3) 891-897. [PMID: 20380917.](#) [PMCID: PMC2910617.](#)
46. Kohlgraf, K. G., Ackermann, A., Lu, X., Burnell, K., Belanger, M., **Cavanaugh, J. E.**, Xie, H., Progulasko-Fox, A. & Brogden, K. A. (2010). Defensins attenuate cytokine responses yet enhance antibody responses to Porphyromonas gingivalis adhesions in mice. *Future Microbiology* 5 (1) 115-125. [PMID: 20020833.](#) [PMCID: PMC2822342.](#)
47. Fine, P., Herr, K., Titler, M., Sanders, S., **Cavanaugh, J.**, Swegle, J., Forcucci, C., Tang, X., Lane, K. & Reyes, J. (2010). The cancer pain practice index (CPPI): A measure of evidence-based practice adherence for cancer pain management in older adults in hospice care. *Journal of Pain and Symptom Management* 39 (5) 791-802. [PMID: 20471541.](#) [PMCID: PMC2884991.](#)
48. Thunell, D. H., Tymkiw, K. D., Johnson, G. H., Joly, S., Burnell, K. K., **Cavanaugh, J. E.**, Brogden, K. A. & Guthmiller, J. M. (2010). A multiplex immunoassay demonstrates reductions in gingival crevicular fluid cytokines following initial periodontal therapy. *Journal of Periodontal Research* 45 (1) 148-152. [PMID: 19602112.](#)
49. Neath, A. A. & **Cavanaugh, J. E.** (2010). Linear model evaluation based on estimation of model bias. *Journal of Statistical Theory and Practice* 4 (1) 169-179.
50. **Cavanaugh, J. E.**, Neath, A. A. & Davies, S. L. (2010). An alternate version of the conceptual predictive statistic based on a symmetrized discrepancy measure. *Journal of Statistical Planning and Inference* 140 (11) 3389-3398.
51. Pohlgreen, P. M., Yang, M., Bohnett, L. C. & **Cavanaugh, J. E.** (2010). A time-series analysis of Clostridium difficile and its seasonal association with influenza. *Infection Control and Hospital Epidemiology* 31 (4) 382-387. [PMID: 20175682.](#) [PMCID: PMC3024857.](#)
52. Herr, K., Titler, M., Fine, P., Sanders, S., **Cavanaugh, J.**, Swegle, J., Forcucci, C. & Tang, X. (2010). Assessing and treating pain in hospices: Current state of evidence-based practices. *Journal of Pain and Symptom Management* 39 (5) 803-819. [PMID: 20471542.](#) [PMCID: PMC2884963.](#)
53. Abraham, M., Acree, W. L., Leo, A. J., Hoekman, D. & **Cavanaugh, J. E.** (2010). Water-solvent partition coefficients and log P values as predictors for blood-brain distribution: Application of the Akaike information criterion. *Journal of Pharmaceutical Sciences* 99 (5) 2492-2501. [PMID: 19967782.](#)
54. Polgreen, P. M., Bohnett, L. C., Yang, M., Pentella, M. A. & **Cavanaugh, J. E.** (2010). A spatial analysis of the spread of mumps: The importance of college students and their spring-break-associated travel. *Epidemiology and Infection* 138 (3) 434-441. [PMID: 19737443.](#) [PMCID: PMC2956339.](#)

55. Streit, J. A., Yang, M., **Cavanaugh, J. E.** & Polgreen, P. M. (2011). Upward trend in dengue incidence among hospitalized patients, United States. *Emerging Infectious Diseases* 17 (5) 914-916. [PMID: 21529411](#). [PMCID: PMC3321762](#).
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194. Arakkal, A. T., Polgreen, L. A., Chapman, C. G., Simmering, J. E., **Cavanaugh, J. E.**, Polgreen, P. M. and Miller, A. C. (2024). Association between household opioid prescriptions and risk for overdose among family members not prescribed opioids. *Pharmacotherapy*, 44, 110–121. DOI: [10.1002/phar.2891](https://doi.org/10.1002/phar.2891).
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202. Jovanovic, N., Peek–Asa, C., Zhang, L., **Cavanaugh, J. E.**, Smajlovic, A., Nikolovski, S., Begagic, E. and Knezovic, I. (2024). Association between paediatric eye injuries, later academic success and social performance. *Med Glas (Zenica)*, 21. DOI: [10.17392/1703-21-02](https://doi.org/10.17392/1703-21-02).
203. Hamann, C. J., Davis, J. A., Pae, G., Zhu, M., Shill, G. H., Tefft, B. and **Cavanaugh, J. E.** (2025). Impact of driver licensing renewal policies on older driver crash involvement and injury rates in 13 states, 2000–2019. *Injury Epidemiology*, 12:3, DOI: [10.1186/s40621-024-00555-9](https://doi.org/10.1186/s40621-024-00555-9).
204. Hamann, C. J., Jansson, S., Wendt, L., Reyes, M., Davis, J., **Cavanaugh, J. E.** and Peek–Asa C. (2025). Charge combinations and conviction rates among alcohol-influenced drivers involved in motor vehicle crashes in Iowa. *Journal of Safety Research*, 92, 375–384. DOI: [10.1016/j.jsr.2024.12.008](https://doi.org/10.1016/j.jsr.2024.12.008).

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207. Struble, R. D., Arakkal, A. T., **Cavanaugh, J. E.**, Polgreen, P. M. and Miller, A. C. (2025). Evaluating potential missed opportunities to prevent, treat, or diagnose sepsis: A population-based retrospective study of insurance claims. *Critical Care Explorations*, 7:e1240. DOI: [10.1097/CCE.0000000000001240](https://doi.org/10.1097/CCE.0000000000001240).

Books

1. **Cavanaugh, J. E.** (1993). Small-sample model selection in the general state-space setting. In PhD dissertation, University of California, Davis; 1993. Dissertation advisor: Robert H. Shumway.
2. **Cavanaugh, J. E.**, Wang, Y. & Davis, J. W. (2003). Locally self-similar processes and their wavelet analysis. In Rao, C. R. & Shanbhag, D. N. (Eds.) *Stochastic Processes: Modeling and Simulation* (Handbook of Statistics 21). pp. 93-135. Amsterdam: Elsevier Science.
3. **Cavanaugh, J. E.** (2006). Encyclopedia Entry: Akaike Information Criterion. In Salkind, N. (Eds.) *Encyclopedia of Measurement and Statistics*. Thousand Oaks, CA: Sage Publications.
4. **Cavanaugh, J. E.**, Davies, S. L. & Neath, A. A. (2008). Discrepancy-based model selection criteria using cross validation. In Huber, C., Limnios, N., Nikulin, M. & Vonta, F. (Eds.) *Statistical Models and Methods for Biomedical and Technical Systems*. pp. 473-485. Boston, Massachusetts: Birkhauser.
5. **Cavanaugh, J. E.** & Foster, E. D. (2010). Encyclopedia Entry: Margin of Error. In Salkind, N. (Eds.) *Encyclopedia of Research Design*. Thousand Oaks, CA: Sage Publications.
6. **Cavanaugh, J. E.** & Foster, E. D. (2010). Encyclopedia Entry: Likelihood Ratio Statistic. In *Encyclopedia of Research Design*. Thousand Oaks, CA: Sage Publications.
7. **Cavanaugh, J. E.** & Foster, E. D. (2010). Encyclopedia Entry: Odds. In *Encyclopedia of Research Design*. Thousand Oaks, CA: Sage Publications.
8. **Cavanaugh, J. E.** & Neath, A. A. (2010). Encyclopedia Entry: Akaike Information Criterion. In Lovric, M. (Eds.) *International Encyclopedia of Statistical Sciences*. New York: Springer.
9. Neath, A. A. & **Cavanaugh, J. E.** (2010). Encyclopedia Entry: Multiple Comparisons Testing from a Bayesian Perspective. In Lovric, M. (Eds.) *International Encyclopedia of Statistical Sciences*. New York: Springer.
10. Foster, E. D., Yang, M., Polgreen, P. M. & **Cavanaugh, J. E.** (2011). A time series analysis to investigate the relationship between acute myocardial infarction incidence and influenza activity. In Frenkel, I., Beibler, K. & Karagrigoriou, A. (Eds.) *Biometrie und Medizinische Informatik Greifswalder Seminarberichte: Heft 18, Risk Analysis*. pp. 27-39. Aachen: Shaker Verlag.

Abstracts

1. Lounsbury, P., **Cavanaugh, J. E.** & Gordon, E. E. (2005). Effect of Phase II Cardiac Rehabilitation on Depression and Quality of Life. (Vols. 25). pp. 296. *Journal of Cardiopulmonary Rehabilitation*.
2. Lounsbury, P., **Cavanaugh, J. E.** & Gordon, E. E. (2006). The Percutaneous Coronary Intervention (PCI) Patient in Outpatient Cardiovascular Rehabilitation (PhII). (Vols. 26). pp. 268. *Journal of Cardiopulmonary Rehabilitation*.

Reviews

1. **Cavanaugh, J. E.** (2004). Review: *Regression Models for Time Series Analysis*, by B Kedem and K Fokianos. *Journal of the American Statistical Association* 99 299.
2. **Cavanaugh, J. E.** (2006). Review: *Handbook of Epidemiology*, edited by W Ahrens and I Pigeot. *Journal of the American Statistical Association* 101 402-403.

3. **Cavanaugh, J. E.** (2006). Review: Advances in Minimum Description Length: Theory and Application, edited by PD Grunwald, IJ Myung and MA Pitt. *Journal of the American Statistical Association* 101 859.
4. **Cavanaugh, J. E.** (2006). Review: Survival Analysis: A Self-Learning Text (Second Edition), by D Kleinbaum and M Klein. *Journal of the American Statistical Association* 101 1318-1319.
5. **Cavanaugh, J. E.** (2007). Review: The Exploration and Analysis of Data (Fifth Edition), by JL Devore and R Peck. *The American Statistician* 61 97-98.
6. **Cavanaugh, J. E.** (2007). Review: Mind on Statistics (Third Edition), by JM Utts and RF Heckard. *The American Statistician* 61 95.
7. **Cavanaugh, J. E.** (2007). Review: Seeing Through Statistics (Third Edition), by JM Utts. *The American Statistician* 61 (95).
8. **Cavanaugh, J.** (2008). Review: 100 Statistical Tests (Third Edition), by GK Kanji. *Journal of the American Statistical Association* 103 435.
9. **Cavanaugh, J.** (2008). Review: Series Approximation Methods in Statistics (Third Edition), by JE Kolassa. *Journal of the American Statistical Association* 102 1074.
10. **Cavanaugh, J.** (2008). Review: An Introduction to the Mathematics of Money, by D Lovelock, M Mendel and AL Wright. *The American Statistician* 62 185.
11. **Cavanaugh, J.** (2009). Review: Statistical Issues in Drug Development (Second Edition), by S. Senn. *Journal of the American Statistical Association* 104 1291.
12. **Cavanaugh, J.** (2009). Review: Applied Regression Analysis and Generalized Linear Models (Second Edition), by J. Fox. *Journal of the American Statistical Association* 104 1725-1726.
13. **Cavanaugh, J.** (2009). Review: Medical Biostatistics (Second Edition), by G.K. Kanji. *Journal of the American Statistical Association* 63 284-285.
14. **Cavanaugh, J.** (2009). Review: Linear Models and Generalizations: Least Squares and Alternatives (Third Edition), by CR Rao, H Toutenburg, Shalabh and C Heumann. *Journal of the American Statistical Association* 104 870.
15. **Cavanaugh, J.** (2009). Review: Sample Size Calculations in Clinical Research (Second Edition), by S-C Chow, J Shao and H Wang. *Journal of the American Statistical Association* 104 425.
16. **Cavanaugh, J.** (2009). Review: Information Criteria and Statistical Modeling, by S. Konishi and G. Kitagawa. *Journal of the American Statistical Association* 104 1284-1285.
17. **Cavanaugh, J.** (2010). Review: An Introduction to Generalize Linear Models (Third Edition), by A.J. Dobson and A.G. Barnett. *The American Statistician* 64 95.
18. **Cavanaugh, J.** (2010). Review: Statistical Methods for Categorical Data Analysis (Second Edition), by D.A. Powers and Y. Xie. *Journal of the American Statistical Association* 105 879.
19. **Cavanaugh, J.** (2010). Review: Probability and Statistical Inference (Second Edition), by R.V. Hogg and E.A. Tanis. *The American Statistician* 64 275.
20. **Cavanaugh, J.** (2010). Review: Learning to Live with Statistics: From Concept to Practice, by D. Asquith. *The American Statistician* 64 89-90.
21. **Cavanaugh, J.** (2011). Review: Elementary Statistics Using Excel (Fourth Edition), by M.F. Triola. *The American Statistician* 65 27.

Non-peer-reviewed journal articles

1. Huang, Y., Palaniappan, K., Zhuang, X. & **Cavanaugh, J. E.** (1995). Optic flow field segmentation and motion estimation using a robust genetic partitioning algorithm. *Proceedings of 1995 IEEE Workshop on Nonlinear Signal and Image Processing* 2 698-701.
2. Hedburg, K. & **Cavanaugh, J.**, (1999). Time series spectral discriminants based on Kullback information measures (with an application to seismology). *1999 Proceedings of the American Statistical Association, Section on Statistics and the Environment* 64-69.
3. Davis, J. W. & **Cavanaugh, J. E.** (2001). A wavelet-based discriminant procedure for signal-plus-noise processes. *2001 Proceedings of the American Statistical Association, Section on Physical and Engineering Sciences (CD-ROM)*.

4. Davis, J. W. & **Cavanaugh, J. E.** (2003). Time-frequency discrimination of nonstationary processes based on wavelets. *2003 Proceedings of the American Statistical Association, Section on Physical and Engineering Sciences (CD-ROM)*.
5. Neath, A. A., **Cavanaugh, J. E.** & Davies, S. L. (2004). An optimality result for a cross validation estimate of prediction error. *2004 Proceedings of the American Statistical Association, Section on Biometrics (CD-ROM)*.
6. Roberts, M. S., **Cavanaugh, J. E.**, Danovitch, G., Gantz, D., Landsittel, D., Losina, E., Rhode, C., Schmeiser, B. & Burdick, J. (2004). Report of the independent expert panel on statistical methods for the analysis of organ transplantation data: Simulation modeling. *U.S. Department of Health and Human Services, Rockville, Maryland*.
7. Fethke, N. B., Anton, D. C., **Cavanaugh, J. E.**, Gerr, F. & Cook, T. M. (2006). The effect of sampling duration on EMG-based estimates of exposure to forceful exertion. *Proceedings of the 4th Annual National Occupational Research Agenda (NORA) Young/New Investigators Symposium*.
8. Fethke, N. B., Anton, D. C., **Cavanaugh, J. E.**, Gerr, F. & Cook, T. M. (2006). The effect of EMG sampling duration on forceful exertion exposure estimates. *Proceedings of the International Ergonomics Association XVI Triennial Congress (CD-ROM)*.
9. Neath, A. A., Downen, L. & **Cavanaugh, J. E.** (2007). Linear regression variable selection based on estimation of model bias. *2007 Proceedings of the American Statistical Association (CD-ROM)*.
10. Kaskie, B., Imhof, S., Culp, K. & **Cavanaugh, J. E.** (2007). The Iowa workforce seniors study. *Iowa Workforce Development, Des Moines, Iowa*.
11. Shang, J., **Cavanaugh, J. E.** & Wright, F. T. (2007). A Bayesian multiple comparison procedure for order restricted unbalanced mixed models. *2007 Proceedings of the American Statistical Association (CD-ROM)*.
12. Neath, A. A. & **Cavanaugh, J. E.** (2008). A Bayesian conceptual predictive statistic. *2008 Proceedings of the American Statistical Association (CD-ROM)*.
13. Neath, A. A., Zhang, Z. & **Cavanaugh, J. E.** (2009). Linear model selection for replicated data and nearly replicated data. *2009 Proceedings of the American Statistical Association (CD-ROM)*.
14. **Cavanaugh, J. E.** (2012). Decision analysis and social choice theory. *2012 Proceedings of the American Statistical Association CD-ROM*.
15. **Cavanaugh, J. E.** & Neath, A. A. (2013). Model selection criteria based on computationally intensive estimators of the expected optimism. *Proceedings of the 59th ISI World Statistics Congress (Session IPS012) 127-132*.

Conference Proceedings

1. Neath, A. A., **Cavanaugh, J. E.** & Reidle, B. (2015). A connection between discrepancy function estimation and the p-value. Alexandria, Virginia: 2016 Proceedings of the American Statistical Association (online).

Software

1. Yang, M., Zamba, K. D. & **Cavanaugh, J. E.** (2013). Statistical Model for Count Time Series with Excess Zeros (zim). R Package. Available on the Comprehensive R Archive Network (CRAN).
2. Seedorf, M. S., Oleson, J. J., Brown, G., **Cavanaugh, J. E.** & McMurray, M. (2017). Bootstrapped Differences of Time Series (bdots). R Package: Available on the Comprehensive R Archive Network (CRAN).

Other Publications

1. **Cavanaugh, J. E.**, McQuarrie, A. D. & Shumway, R. H. (1993). Parametric and nonparametric discriminants for regional earthquakes and explosions. (Vols. Report PL-TR-93-2164). Published and distributed by Phillips Laboratory, Hanscom Air Force Base, 01731-3010.

2. **Cavanaugh, J. E.** (2006). Review: Encyclopedia of Biostatistics. Colton, T. & Armitage, P. (Eds.) (Vols. 101). (Second Edition), pp. 844. Journal of the American Statistical Association.
3. **Cavanaugh, J. E.** (2007). Review: Encyclopedia of Statistical Sciences. Vidakovic, B., Balakrishnan, N., Read, C. & Kotz, S. (Eds.) (Vols. 1075). (Second Edition), pp. 102. Journal of the American Statistical Association.
4. **Cavanaugh, J. E.** (2012). Discussion on "Catching up faster by switching sooner: a predictive approach to adaptive estimation with an application to the AIC-BIC dilemma" by T. van Erven, P. Grünwald and S. de Rooij. (Vols. 74). pp. 402-403. Journal of the Royal Statistical Society, Series B.
5. **Cavanaugh, J. E.** (2016). Model selection: Bayesian information criterion. (Updated from an original article by A. F. M. Smith.). pp. 1-3. Wiley, Hoboken, New Jersey: Wiley StatsRef: Statistics Reference Online. DOI: [10.1002/9781118445112.stat00247.pub2](https://doi.org/10.1002/9781118445112.stat00247.pub2).
6. Simmering, J. E., Polgreen, L. A., Comellas, A. P., **Cavanaugh, J. E.** & Polgreen, P. M. (2016). Identifying patients with COPD at high risk of readmission. (Vols. 3). pp. 729-738. Chronic Obstructive Pulmonary Diseases: Journal of the COPD Foundation. DOI: [doi: http://dx.doi.org/10.15326/jcopdf.3.4.2016.0136](http://dx.doi.org/10.15326/jcopdf.3.4.2016.0136).
7. Barr, J. R. & **Cavanaugh, J. E.** (2018). Forensics: Assessing model goodness - A machine learning view. (Vols. 2). (1850015), pp. 1-7. World Scientific, Singapore: Encyclopedia with Semantic Computing and Robotic Intelligence. DOI: [10.1142/S2529737618500156](https://doi.org/10.1142/S2529737618500156).
8. Flores, J. E. & **Cavanaugh, J. E.** (2018). Partial Likelihood. (Updated from an original article by D. Harrington). pp. 1-3. Wiley, Hoboken, New Jersey: Wiley StatsRef: Statistics Reference Online. DOI: [10.1002/9781118445112.stat05932.pub2](https://doi.org/10.1002/9781118445112.stat05932.pub2).
9. Peterson, R. A. & **Cavanaugh, J. E.** (2019). Discussion of "Prior-based Bayesian information criterion (PBIC)," by M.J. Bayarria, J.O. Berger, W. Jang, S. Ray, L.R. Pericchi and I. Visser. (Vols. 3). pp. 32-34. Statistical Theory and Related Fields. DOI: [10.1080/24754269.2019.1611145](https://doi.org/10.1080/24754269.2019.1611145).
10. **Cavanaugh, J. E.** (2020). Chaloner, Kathryn M. In Wiley StatsRef: Statistics Reference Online. pp. 1-4. Hoboken, New Jersey: Wiley. DOI: [10.1002/9781118445112.stat08252](https://doi.org/10.1002/9781118445112.stat08252).
11. Flores, J. E. & **Cavanaugh, J. E.** (2022). Akaike Information Criterion. Frey, B. (Eds.) (Second Edition) Thousand Oaks, California: Encyclopedia of Research Design (Second Edition), Sage Publications.

Research Interests/Current Projects

- Epidemiology
- Model Selection
- Dentistry
- State-Space Models
- Infectious Diseases
- Modeling Diagnostics
- Injury Prevention
- Time Series Analysis

Grants and Contracts

Active (Funded)

1. Estimating the Risk for and Severity of Respiratory Infections attributable to CFTR Heterozygosity; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Polgreen, Philip (Principal Investigator)
 - R01 AI143671
 - Apr 1, 2021 - Mar 31, 2026
 - Amount: \$4,094,715.00, 18% effort
2. A Cluster Randomized Trial to Improve Adolescent Bicycling Safety; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Hamann, Cara (Principal Investigator)

- R01 HD102402
 - Sep 9, 2021 - Aug 31, 2026
 - Amount: \$2,224,349.00, 1% effort
 - Bicycling is a leading cause of childhood injuries and, second to motor vehicles, bicycles contribute to more childhood injuries than any other consumer product. Approaches to increasing bicycling safety among youth include bicycle safety education programs and parents also play a vital role as influencers of their child's bicycle handling and traffic safety skills, perceptions, and self-efficacy. Bicycle safety education programs are abundant, but little is known about their effectiveness in terms of behavior change. This cluster randomized controlled trial will evaluate a community-based bicycle safety education program with and without an in-person parent training component. Our main hypotheses are that adolescents who receive the bicycle safety intervention will have increased safety behaviors (e.g., helmet use, hazard recognition), reduced errors (e.g., riding against traffic, swerving/wobbling), and increased knowledge, perceptions, and self-efficacy compared to the control group; and adolescents whose parent receives the parent training will have even greater improvements in study outcomes than those whose parents do not receive the training. If successful, approaches from this study could be widely implemented to improve adolescent bicycling safety.
3. Iowa Summer Institute for Research Education in Biostatistics and Data Science (ISIB); National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Zamba, Gideon (Principal Investigator)
 - R25 HL161716
 - Mar 1, 2022 - Feb 28, 2027
 - Amount: \$1,280,640.00, 5% effort
 - We propose to enroll sixteen to eighteen students a year, including at least 50% of URM and at least 50% women, to build a pipeline with minority serving institutions, to build a longitudinal follow-up mechanism to track ISIB alumni into their graduate majors, and to measure an overall success through the percent of students who enroll in graduate programs in Biostatistics, Statistics, Data Science and in the STEM science data field.
 4. iCREATE: Increasing Capacity in Research in Eastern Europe; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Hamann, Cara (Principal Investigator)
 - D43 TW007261
 - May 26, 2005 - Aug 31, 2027
 - Amount: \$4,875,293.00, 2% effort
 - The global injury burden is disproportionately concentrated in low and middle income countries (LMIC). This project introduces injury and violence training to the LMIC countries of Armenia, Georgia, and Moldova, which are strategic global priorities due to their political and economic ties to the Middle East, Russia, and Europe. Capacity for medical and public health education in these countries has been growing, but injury and violence is not currently addressed. The aims of our training program are to: train a critical mass of researchers from Armenia, Georgia, and Moldova to conduct innovative research; facilitate the transition of trainees to positions of leadership; develop our partner institutions as sustainable centers of excellence in injury research and education; and, engage partners to translate research into effective prevention and treatment programs.
 5. Great Plains Center for Agricultural Health (GPCAH); CDC; Cavanaugh, Joseph (Co-Investigator), Anthony, Renee (Principal Investigator)
 - U54 OH007548
 - Sep 30, 2022 - Sep 29, 2027
 - Amount: \$34,676,171.00, 4% effort

6. Contribution of Small Airways to Mucociliary Transport Dysfunction; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Abou Alaiwa, Mahmoud (Principal Investigator)
 - R01 HL167025
 - Apr 1, 2023 - Feb 29, 2028
 - Amount: \$3,580,318.00, 5% effort
7. University of Iowa Injury Prevention Research Center; Centers for Disease Control and Prevention; Cavanaugh, Joseph (Co-Investigator), Casteel, Carri (Principal Investigator)
 - R49 CE003095
 - Aug 1, 2019 - Jul 31, 2029
 - Amount: \$6,058,161.00, 10% effort
 - A continuation of a Center which began in 1990, the goals of the UI IPRC are to control and prevent injuries, especially in rural communities, through interdisciplinary research, outreach and training.
8. The University of Iowa Institute of Clinical and Translational Science; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Winokur, Patricia (Principal Investigator), Hansen, Marlan (Principal Investigator)
 - UM1 TR004403
 - Apr 1, 2023 - Mar 31, 2030
 - Amount: \$28,344,223.00, 5% effort
 - Specific aims: To create a definable academic home for the discipline of clinical and translational science and to encourage the development of novel methods and approaches to clinical and translational research, enhance informatics and technology resources, and improve training and mentoring to ensure that new investigators can navigate the increasingly complex research system.
9. Improving High Blood Pressure in Older Adults Living with Multiple Chronic Diseases - The SMBP Study; PCORI; Cavanaugh, Joseph (Co-Investigator), Kennelty, Korey (Principal Investigator).
 - HMC-2023C2-33427
 - Oct 1, 2024 - May 1, 2031
 - Amount: \$17,901,062.00, 15% effort

Completed

1. New Bootstrap Methodologies for State-Space Modeling; Research Council of University Missouri-Columbia Summer Research Fellowship; Cavanaugh, Joseph E (Principal Investigator)
 - 1994
 - Amount: \$4,000.00
2. New Bootstrap Methodologies for State-Space Modeling; Research Board of University Missouri System; Cavanaugh, Joseph E (Principal Investigator)
 - 1994 - 1995
 - Amount: \$10,900.00
3. The EM Algorithm in State-Space Modeling; Research Council of University Missouri-Columbia Summer Research Fellowship; Cavanaugh, Joseph E (Principal Investigator)
 - 1996
 - Amount: \$7,000.00
4. Statistics Research Computing Equipment; National Science Foundation (DMS-9508296) Department of Statistics; University Missouri-Columbia; Cavanaugh, Joseph E (Principal Investigator)
 - 1995 - 1997

- Amount: \$60,912.00
5. A New Class of Model Selection Criteria Based on Kullback's Symmetric Divergence; National Science Foundation (DMS-9704436); Cavanaugh, Joseph E (Principal Investigator)
 - 1997 - 2000
 - Amount: \$70,120.00
 6. Development of Courses and Recruitment Models for Attracting and Preparing Middle Grade Mathematics Teachers; National Science Foundation (ESI-0101822); Cavanaugh, Joseph E (Consultant), Papick, Ira (Principal Investigator)
 - 2001 - 2002
 - Amount: \$4,500.00
 7. Seasonal, Interannual and Long-Term Elevation Change in the East Antarctic Ice Sheet from Satellite Radar Altimetry; National Science Foundation (OPP-9818734); Cavanaugh, Joseph E (Consultant), Davis, Curt H (Principal Investigator)
 - Jul - Jul 2002
 - Amount: \$6,600.00
 8. Unified Bayesian Order-Restricted Inferences; Research Board of University Missouri System; Cavanaugh, Joseph E (Principal Investigator), Wright, Farroll T (Principal Investigator)
 - 2004 - 2005
 - Amount: \$15,000.00
 9. Opening Doors for Mature Workers: Phase I and Phase 2; Iowa Workforce Development US Dept of Labor; Cavanaugh, Joseph E (Co-Investigator), Kaskie, Brian (Principal Investigator)
 - Jan 1, 2004 - Jun 30, 2005
 - Amount: \$75,000.00
 10. The Electromyographic Sampling Duration Required to Precisely Estimate Individual Exposure to Forceful Exertions; Heartland Education Research Center; Fethke, Nathan (Principal Investigator)
 - Jul 1, 2005 - Jun 30, 2006
 - Amount: \$15,000.00
 11. Emerging Infections Network; Centers for Disease Control / Infectious Diseases Society of America; Cavanaugh, Joseph E (Statistician), Polgreen, Philip (Principal Investigator)
 - Jul 1, 2006 - Jun 30, 2007
 - Amount: \$162,780.00
 12. Corporate Health Program; United Services Automobile Association; Cavanaugh, Joseph E (Co-Investigator), Kohatsu, Neal (Principal Investigator)
 - Aug 15, 2004 - Aug 13, 2007
 - Amount: \$939,072.00
 13. Graduate Training Program in Clinical Research K30 Clinical Research Curriculum Award; National Institutes of Health (HL-04117); Rosenthal, Gary (Principal Investigator)
 - Nov 1, 2002 - Sep 16, 2007
 - Amount: \$1,203,885.00
 14. Longitudinal Study of Fluoride, Diet, Caries and Fluorosis; National Institutes of Health; Cavanaugh, Joseph E (Co-Investigator), Levy, Steven (Principal Investigator)
 - R01-DE009551
 - Sep 1, 1991 - Jun 30, 2009
 - Amount: \$5,525,311.00

15. Iowa Injury Prevention Research Center; Centers for Disease Control; Hartley, Carolyn (Principal Investigator)
 - R49-CD001167-02
 - Aug 1, 2007 - Mar 1, 2010
 - Amount: \$3,224,173.00
16. Parent-Based Intervention to Increase Safe Teen Driving; Centers for Disease Control; Cavanaugh, Joseph E (Co-Investigator), Peek-Asa, Corinne (Principal Investigator)
 - R49-CE000947
 - Sep 30, 2006 - Sep 30, 2010
 - Amount: \$250,000.00
17. Optimizing Influenza Surveillance in a Rural State; Pfizer Inc; Cavanaugh, Joseph E (Co-Investigator), Polgreen, Philip (Principal Investigator)
 - Sep 1, 2008 - Jun 30, 2011
 - Amount: \$130,000.00
18. Elderly Cancer Survivors: Cognitive Outcomes and Markers of Neurodegeneration; National Institutes of Health; Schultz, Susan (Principal Investigator)
 - R01-CA122934
 - Jun 5, 2007 - Apr 30, 2012
 - Amount: \$175,000.00
19. Iowa Injury Prevention Research Center; Centers for Disease Control; Cavanaugh, Joseph E (Co-Investigator), Peek-Asa, Corinne (Principal Investigator)
 - R49-CD001167
 - Jan 20, 2006 - Jul 31, 2012
 - Amount: \$11,787,299.00
20. Iowa Injury Prevention Research Center; Centers for Disease Control; McGehee, Daniel (Principal Investigator)
 - 5 R40 CE001167-02
 - Aug 1, 2007 - Jul 31, 2012
 - Amount: \$3,224,173.00
21. A Collaborative Model of Mental Health Care for Older Iowans; Department of Health and Human Services, Agency for Healthcare Research & Quality; Cavanaugh, Joseph E (Co-Investigator), Kaskie, Brian (Principal Investigator)
 - R18 HS018447
 - Sep 30, 2009 - Jul 31, 2012
 - Amount: \$361,828.00
22. Iowa Fluoride Study Age 17 Data Collection; Delta Dental of Iowa; Cavanaugh, Joseph E, Levy, Steven (Principal Investigator)
 - Jan 1, 2011 - Dec 31, 2012
 - Amount: \$84,305.00
23. Optimizing Pre-Operative Antibiotic Prophylaxis for Cardiac and Orthopedic Procedures; Department of Health and Human Services; Cavanaugh, Joseph E. (Statistician), Ward, Marcia M (Principal Investigator)
 - HHS 29029032001T
 - Dec 1, 2010 - Aug 29, 2013
 - Amount: \$1,170,428.00, 5% effort

24. University of Iowa Clinical and Translational Science Program; Cavanaugh, Joseph E (Statistician), Rosenthal, Gary (Principal Investigator)
- 3 UL Trr000442
 - Sep 1, 2009 - Apr 30, 2014
 - Amount: \$1,374,437.00
 - Specific aims: To create a definable academic home for the discipline of clinical and translational science and to encourage the development of novel methods and approaches to clinical and translational research, enhance informatics and technology resources, and improve training and mentoring to ensure that new investigators can navigate the increasingly complex research system.
25. UI Clinical and Translational Science Program.; National Institutes of Health Clinical and Translational Research; Cavanaugh, Joseph (Statistician), Rosenthal, Gary (Principal Investigator)
- UL1-RR024979
 - Jul 2009 - May 2014
 - 10% effort
26. Internal Medicine e-Health Project; Internally funded through Department of Internal Medicine; Cavanaugh, Joseph E. (Statistician), Polgreen, Phil (Principal Investigator)
- No Contract #
 - Sep 1, 2013 - Jul 31, 2014
 - 10% effort
27. Iowa Phase II Clinical Trials of Novel Therapies for Lung Diseases; National Institutes of Health; Cavanaugh, Joseph E (Co-Investigator), Durairaj, Lakshmi (Principal Investigator)
- 5 U01 HL102288
 - Jul 1, 2010 - Jun 30, 2015
 - Amount: \$1,517,712.00
28. Evaluation of Iowa's Anti-Bullying Legislation: Compliance and Impact; Robert Wood Johnson Foundation; Cavanaugh, Joseph E. (Statistician), Ramirez, Marizen R. (Principal Investigator)
- Contract #70507
 - Nov 1, 2013 - Aug 31, 2015
 - Amount: \$41,960.00, 6% effort
 - Aims are, through an implementation evaluation, to describe how Iowa middle schools have carried out provisions of and complied with the 2005 Iowa anti-bullying legislation. Our findings will be of value to school administrators who carry out provisions of the law, state and local departments of education that govern the adoption of the law, and policy makers who may amend or create similar legislation in the future.
29. Iowa Summer Institute in Biostatistics (ISIB); NIH; Cavanaugh, Joseph E. (Co-Investigator), Chaloner, Kathryn M. (Principal Investigator)
- 5 T15 HL097622
 - Aug 20, 2009 - Feb 28, 2016
 - Amount: \$217,159.00, 4% effort
 - There is a nationwide shortage of biostatisticians and the shortage is having a negative impact on medical and public health research. The goal of this proposed program is to increase the number of minority undergraduates who enter graduate programs in Biostatistics or related areas. Instruction will be through case-based instruction of real biomedical research; computer laboratory training; projects; and clinical and translational research enrichment activities.

30. Stress and Decision Making in Older Persons: Toward a Neurobehavioral Phenotype.; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Denburg, Natalie (Principal Investigator)
- R56-AG046539
 - Jul 2015 - May 2016
 - 3% effort
31. A Randomized Controlled Trial to Improve Teen Driving; National Institutes of Health; Cavanaugh, Joseph E. (Statistician), Peek-Asa, Corinne (Principal Investigator)
- 5 R01 HD065095
 - Feb 2, 2011 - Jul 31, 2016
 - Amount: \$189,041.00, 4% effort
 - Specific aims: This randomized controlled trial will evaluate an intervention that provides parents with objective feedback about their teen's driving as well as strategies to improve communication with their teen about driving.
32. Healthier Workforce Center for Excellence; Department of Health and Human Services; Cavanaugh, Joseph E. (Statistician), Merchant, James A. (Principal Investigator)
- 5 U19 OH008868
 - Oct 1, 2011 - Aug 31, 2016
 - Amount: \$643,256.00, 1% effort
 - The goal of this project is to assess the effectiveness, efficiency, and health-related quality of life effects of several disease management and health promotion introduced to employees at several companies for which Wellmark Blue Cross Blue Shield is the claims administrator.
33. Implementation and Effectiveness of a S. aureus Surgical Site Infection Prevention Bundle; AHRQ; Cavanaugh, Joseph E. (Co-Investigator), Herwaldt, Loreen (Principal Investigator)
- 1 R18 HS022467
 - Sep 30, 2013 - Sep 29, 2016
 - Amount: \$1,210,005.00, 2% effort
 - The purpose of this grant is to develop a training tool.
34. Secondary Analyses of Adolescent Caries, Including Fluoride, Diet and Other Factors; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Levy, Steven (Principal Investigator)
- R03-DE023784
 - Aug 10, 2014 - Jul 31, 2017
 - 10% effort
35. e-Health Network/The University of Iowa Hospitals and Clinics eHealth Extension Network Project; U.S. Department of Agriculture; Cavanaugh, Joseph (Co-Investigator), Pohlgreen, Philip (Research Director)
- No Contract #
 - Jan 1, 2016 - Nov 25, 2017
 - Amount: \$498,973.00, 10% effort
 - The University of Iowa eHealth Extension Network Project will supply 65 sites in 45 counties around Iowa with telehealth carts equipped with high quality cameras, HIPPA compliant video conferencing (Vidyo) and cloud-based image sharing software (lifelIMAGE). By utilizing this technology and building collaborations with our rural providers, we can build an eHealth Extension Network to address many of the unique challenges our Iowa patients and providers face. This grant outlines multiple approaches to address rural healthcare challenges. Through its implementation we will provide access to medical specialists not currently available to rural medical professionals or their patients. The UIHC has committed to a 107% match to our grant application budget of \$498,973.

36. Fluoride, Dietary, and Other Factors Related to Young Adult Bone Measure and Dental Caries; National Institutes of Health; Cavanaugh, Joseph E. (Co-Investigator), Levy, Steven (Principal Investigator)
- Apr 1, 1998 - Aug 31, 2018
 - Amount: \$888,801.00, 10% effort
 - The project continues to assess the relationships of dietary, physical activity, and other factors with cross-sectional and longitudinal bone density measures. This funding will allow for assessment of bone and dental caries outcomes in Iowa Bone Development Study/Iowa Fluoride Study participants at age 23.
37. Understanding Workplace Violence among Young Workers in the U.S.; West Virginia University/DCD; Cavanaugh, J E (Co-Investigator), Casteel, Carri (Principal Investigator)
- 15-214-UI
 - Sep 30, 2015 - Sep 29, 2018
 - Amount: \$21,853.00, 5% effort
 - The specific aims of this study are as follows. First, to estimate the prevalence of workplace violence victimization among workers and to characterize cases with regard to worker, employment, and event attributes. Second, to identify risk factors for workplace violence victimization among young workers. Third, to characterize employer-provided workplace violence prevention and response training received by young workers. Fourth, to describe the employment and educational consequences of workplace violence victimization among young workers and examine associations between these outcomes and worker and event characteristics.
38. Evaluation of Parent-Based Interventions to Support Children after Traumatic Injury; PCORI; Cavanaugh, Joseph E. (Co-Investigator), Ramirez, Marizen R. (Principal Investigator)
- CER-1306-02918
 - Feb 1, 2014 - Dec 31, 2018
 - Amount: \$1,345,408.00, 8% effort
 - Injuries from car crashes, burns, and falls are the leading cause of hospitalization for children. Children can recover physically but have problems dealing with the emotional and social impacts of their injuries. Parents who notice these negative reactions often do not know what to do about them. We will have parents use one of two approaches and compare how well they work in helping children recover emotionally and socially from injuries.
39. Iowa Summer Institute for Research Education in Biostatistics; National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Zamba, Gideon (Principal Investigator)
- 5 R25 HL131467
 - Feb 15, 2016 - Jan 31, 2019
 - Amount: \$228,258.00, 5% effort
 - This is a proposal to the National Institutes of Health (NIH), National Heart, Lung and Blood Institute (NHLBI), from the University of Iowa, in response to RFA-HL-16-017 for a Summer Institute for Research Education in Biostatistics. The ultimate vision of our proposed research education program is to increase the number of undergraduates who enter graduate programs in Biostatistics and to maintain a solid underrepresented minority pipeline into biostatistics graduate programs. The proposal is for the University of Iowa (UI) Department of Biostatistics to recruit a diverse group of 18 trainees each year, from 2016 to 2018, with focus on minority, underrepresented and disadvantaged students who wouldn't have otherwise been exposed to the field of biostatistics.
40. Iowa Injury Prevention Research Center; Centers for Disease Control; Cavanaugh, Joseph E. (Co-Investigator), Peek-Asa, Corinne (Principal Investigator)

- R49 CE002108
 - Aug 1, 2012 - Jul 31, 2019
 - Amount: \$601,005.00, 10% effort
 - Specific aims: 1) conduct a randomized control trial of different types of smoke detectors in a rural area, 2) examine risk taking among children using a bicycle simulator; 3) examine impact of intimate partner violence on rural women's physical and psychological health; and 4) study effects of commonly prescribed epileptic drug Phenytoin on driving safety.
41. University of Iowa Injury Prevention Research Center; Centers for Disease Control and Prevention; Cavanaugh, Joseph (Co-Investigator), Peek-Asa, Corinne (Principal Investigator)
- R49 CE002108
 - Aug 1, 2019 - Jul 31, 2020
 - Direct Cost: \$598,690.00
 - Established in 1990, the University of Iowa Injury Prevention Research Center (IPRC) is organized within the College of Public Health supporting interdisciplinary research to control and prevent injuries, especially in rural communities. Specific aims: 1) translation of an evidence-based teen driving program into a workplace; 2) testing the effectiveness of a novel program to prevent domestic violence among high-risk men; 3) implementation and outcome evaluation of Iowa's anti-bullying legislation; and 4) improved surveillance for determining control measures for poisoning.
42. Anti-bullying Laws and Youth Violence in the United States; University of Minnesota/CDC; Cavanaugh, Joseph E (Principal Investigator)
- P006360102
 - Sep 1, 2017 - Aug 31, 2020
 - Amount: \$37,901.00, 5% effort
 - The specific aims of this project are as follows. First, to evaluate the effectiveness of anti-bullying laws in reducing multiple forms of violent behaviors, and to identify potential mechanisms linking anti-bullying laws to youth violence outcomes. Second, to determine the effectiveness of anti-bullying policies in reducing disparities in multiple forms of youth violence. Third, to examine whether implementation moderates the effectiveness of anti-bullying laws on youth violence outcomes.
43. Link for Schools: A System to Prevent Violence and its Adverse Impacts; US Department of Justice; Cavanaugh, Joseph E (Statistician), Heimer, Karen (Principal Investigator)
- 2016-CK-BX-0006
 - Jan 1, 2017 - Dec 31, 2020
 - Direct Cost: \$3,257,339.00, 1% effort
 - Research study on the effects of violence on students.
44. Great Plains Center for Agricultural Health; Department of Health and Human Services/Centers for Disease Control; Cavanaugh, Joseph E. (Statistician), Anthony, Renee T. (Principal Investigator)
- 5 U54 OH007548
 - Sep 30, 2001 - Sep 29, 2022
 - Amount: \$31,388,129.00, 5% effort
 - This center develops and implements programs of research, intervention, translation, education, and outreach to prevent occupational injury and illness among agricultural workers and their families in Iowa, Missouri, Kansas, Nebraska, Illinois, Wisconsin, Minnesota, South Dakota, and North Dakota.

45. Great Plains Center for Agricultural Health Project B: Instrumented Farm Vehicle Roadway Study; DHHS/CDC; Cavanaugh, Joseph E (Co-Investigator), Hamann, Cara (Co-Principal), Anthony, T. Renee (Co-Principal)
- U54 OH007548
 - Sep 30, 2016 - Sep 29, 2022
 - Amount: \$31,388,129.00, 5% effort
 - A continuation of the current GPCAH, the goals of the Center are to serve as a regional and national resource for agricultural health and safety; conduct research that provides evidence-based strategies to improve the health and safety of agricultural workers; develop and evaluate educational, outreach, and intervention programs, provide relevant and evidence-based assistance (e.g., methods, training, and interventions) to health and safety professionals and community-based agricultural health organizations, and to maintain and expand networks to promote agricultural health and safety research, training, and prevention programs. Project: Haman Safertrek Study.
46. Statistical Support for Dr. Saket Girotra; UIHC Saket Girotra Start Up; Cavanaugh, Joseph E (Statistician), Girotra, Saket (Principal Investigator)
- No Contract #
 - Dec 1, 2021 - Nov 30, 2022
 - 5% effort
47. University of Iowa Clinical and Translational Science Award; National Institutes of Health; Cavanaugh, Joseph E (Statistician), Winokur, Patricia (Principal Investigator)
- UL1 TRR002537
 - Mar 30, 2018 - Feb 28, 2023
 - Amount: \$2,372,971.00, 10% effort
 - Specific aims: To create a definable academic home for the discipline of clinical and translational science and to encourage the development of novel methods and approaches to clinical and translational research, enhance informatics and technology resources, and improve training and mentoring to ensure that new investigators can navigate the increasingly complex research system.
48. Iowa Summer Institute for Research Education in Biostatistics (ISIREB); National Institutes of Health; Cavanaugh, Joseph (Co-Investigator), Zamba, Gideon (Principal Investigator)
- R25 HL147231
 - Mar 1, 2019 - Feb 28, 2023
 - Amount: \$1,005,471.00, 6% effort
 - This is a proposal to the National Institutes of Health (NIH), National Heart, Lung and Blood Institute (NHLBI), from the University of Iowa, in response to RFA-HL-19-019 for an Iowa Summer Institute for Research Education in Biostatistics (ISIREB), Summer Programs 2019, 2020, & 2021.
49. Implementation of a Medication Care Plan to Reduce Unintentional Injury among Rural Older Adults; Centers for Disease Control & Prevention; Cavanaugh, Joseph E (Statistician), Casteel, Carri (Principal Investigator)
- U01 CE002961
 - Sep 30, 2018 - Sep 29, 2023
 - Amount: \$3,096,639.00, 5% effort
 - The long-term goal of the proposed study is to develop a sustainable program for healthcare systems to reduce fatal and nonfatal falls among high-risk older adults living independently in their communities. The objective of the proposed study is to examine how a medication care

plan can be implemented in primary care clinics to reduce medically-treated falls among older adults living in rural Iowa communities.

50. An Expert-Guided Machine-Learning Approach to Estimate the Incidence, Risk and Harms Associated with Diagnostic Delays for Infectious Diseases; National Institutes of Health; Cavanaugh, Joseph E (Co-Investigator), Miller, Aaron (Co-Principal), Polgreen, Philip (Co-Principal)

- R01 HS027375
- Sep 30, 2019 - Sep 29, 2023
- Amount: \$1,484,389.00, 8% effort
- Diagnostic delays for infectious diseases contribute to worse clinical outcomes, increased healthcare costs and, for some infectious diseases, outbreaks of great public health importance. We will use existing large data sets along with machine-learning techniques and expert clinical guidance to detect patterns of healthcare visits representing diagnostic delays. Our goal is to characterize the incidence, risk factors and clinical impact of diagnostic delays for a wide range of infectious diseases to inform future interventions.

Presentations

Keynote/Plenary Address

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| Sep 2007 | Cavanaugh, J. E. Occam's razor and statistical model selection. Presented at Annual Meeting of the Montana Section of the American Statistical Association, Butte, Montana. |
| Apr 2019 | Cavanaugh, J. E., Riedle, B. N. & Neath, A. A. Probabilistic Pairwise Model Comparisons based on Discrepancy Measures and a Reconceptualization of the P-Value. Presented at Annual Meeting of the Albuquerque Section of the American Statistical Association, American Statistical Association, Santa Fe, New Mexico. |
| Jun 2022 | Cavanaugh, J. E., Riedle, B. N. & Neath, A. N. Probabilistic Pairwise Model Comparisons based on Discrepancy Measures and a Reconceptualization of the p-Value. Presented at 7th Stochastic Modeling Techniques and Data Analysis International Conference, Athens, Greece. |

Invited Lectures

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| Sep 2017 | Cavanaugh, J. E., Riedle, B. N. & Neath, A. N. Probabilistic Pairwise Model Comparisons based on Discrepancy Measures and a Reconceptualization of the P-Value. Presented at Biostatistics in the Modern Computing Era, Medical College of Wisconsin, Milwaukee, Wisconsin. |
| Nov 30, 2017 | Cavanaugh, J. E., Zamba, K. D., Yang, M. & Tang, F. Models for Overdispersed Count Time Series with Excess Zeros. Presented at Departmental Colloquium, Department of Statistics and Actuarial Science, University of Iowa, Iowa City, Iowa. |

Oral Presentations

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| 1993 | Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Colloquium, Los Alamos National Laboratory, Los Alamos, New Mexico. |
| 1993 | Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Colloquium, Pacific Northwest National Laboratory, Richland, Washington. |

- 1993 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Departmental Colloquium, Department of Mathematical Sciences, University of Arkansas, Fayetteville, Arkansas.
- 1993 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Departmental Colloquium, Department of Mathematics and Statistics, University of Nebraska, Lincoln, Nebraska.
- 1993 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Departmental Colloquium, Department of Mathematics, University of Kansas, Lawrence, Kansas.
- 1993 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Departmental Colloquium, Department of Statistics, University of Missouri, Columbia, Missouri.
- 1994 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection. Presented at Departmental Colloquium, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, New Mexico.
- Aug 1994 Cavanaugh, J. E. & Shumway, R. H. A bootstrap variant of AIC for state-space model selection (Contributed Paper). Presented at 1994 Joint Statistical Meetings, Toronto, Canada.
- Oct 1994 Cavanaugh, J. E., McQuarrie, A. D. & Shumway, R. H. Parametric and nonparametric discriminants for regional earthquakes and explosions. Presented at Departmental Colloquium, Department of Statistics, University of Missouri, Columbia, Missouri.
- Aug 1995 Cavanaugh, J. E. & Shumway, R. H. On computing the expected Fisher information matrix for state-space model parameters (Contributed Paper). Presented at 1995 Joint Statistical Meetings, Orlando, Florida.
- Mar 1996 Cavanaugh, J. E. & Johnson, W. O. Assessing the predictive influence of cases in a state-space process. Presented at Departmental Colloquium, Department of Statistics, University of Missouri, Columbia, Missouri.
- Apr 1996 Cavanaugh, J. E. Estimators of Kullback-Leibler information for time series model selection (Contributed Presentation). Presented at Mid-Missouri Conference on Longitudinal Data Analysis, University of Missouri, Columbia, Missouri.
- May 1996 Cavanaugh, J. E. & Johnson, W. O. Assessing the predictive influence of cases in a state-space process (Contributed Paper). Presented at Kullback Memorial Research Conference, Washington, District of Columbia.
- Aug 1996 Cavanaugh, J. E. & Johnson, W. O. Assessing the predictive influence of cases in a state-space process (Topic Contributed Paper). Presented at 1996 Joint Statistical Meetings, Chicago, Illinois.
- Jul 1997 Cavanaugh, J. E. A new class of model selection criteria based on Kullback's symmetric divergence (Contributed Paper). Presented at 1997 IMS New Researchers' Conference, University of Wyoming, Laramie, Wyoming.
- Jul 1997 Cavanaugh, J. E. A new class of model selection criteria based on Kullback's symmetric divergence (Contributed Paper). Presented at 1997 IMS Meetings, Park City, Utah.

- Aug 1999 Cavanaugh, J. E. Criteria for linear model selection based on Kullback's symmetric divergence (Contributed Paper). Presented at 1999 Joint Statistical Meetings, Baltimore, Maryland.
- 2000 Cavanaugh, J. E. & Neath, A. A. A regression model selection criterion based on bootstrap bumping for use with resistant fitting. Presented at Departmental Colloquium, Department of Statistics, University of Missouri, Columbia, Missouri.
- 2000 Cavanaugh, J. E. & Neath, A. A. A regression model selection criterion based on bootstrap bumping for use with resistant fitting. Presented at Departmental Colloquium, Department of Statistics, University of Wyoming, Laramie, Wyoming.
- 2000 Cavanaugh, J. E. & Davies, S. L. Discrepancy-based model selection criteria using cross-validation. Presented at Departmental Colloquium, Department of Statistics, Harvard University, Boston, Massachusetts.
- Jun 2000 Cavanaugh, J. E., Wang, Y. & Song, C. Self-similarity index estimation via wavelets for locally self-similar processes (Invited Paper). Presented at International Conference on Statistics in the 21st Century, University of Maine, Orono, Maine.
- Oct 2000 Cavanaugh, J. E. & Neath, A. A. A regression model selection criterion based on bootstrap bumping for use with resistant fitting. Presented at Departmental Colloquium, Department of Mathematics and Statistics, Boston University, Boston, Massachusetts.
- Aug 2001 Cavanaugh, J. E., Wang, Y. & Song, C. Self-similarity index estimation via wavelets for locally self-similar processes (Contributed Paper). Presented at 2001 Joint Statistical Meetings, Atlanta, Georgia.
- 2002 Cavanaugh, J. E. & Davies, S. L. Discrepancy-based model selection criteria using cross-validation. Presented at Departmental Colloquium, Department of Mathematics and Statistics, University of New Mexico, Albuquerque, New Mexico.
- 2002 Cavanaugh, J. E., Wang, Y. & Davis, J. W. Locally self-similar processes and their wavelet analyses. Presented at Departmental Colloquium, Department of Statistics, University of California, Davis, California.
- 2003 Cavanaugh, J. E., Wang, Y. & Davis, J. W. Locally self-similar processes and their wavelet analyses. Presented at Departmental Colloquium, Department of Biostatistics, University of Iowa, Iowa City, Iowa.
- 2003 Cavanaugh, J. E., Wang, Y. & Davis, J. W. Locally self-similar processes and their wavelet analyses. Presented at Departmental Colloquium, Department of Mathematics and Statistics, Arizona State University, Tempe, Arizona.
- Aug 2003 Cavanaugh, J. E. Criteria for linear model selection based on Kullback's symmetric divergence (Invited Paper). Presented at Justus F. Seely Memorial Conference on Linear Models, Oregon State University, Corvallis, Oregon.
- 2004 Cavanaugh, J. E. Criteria for linear model selection based on Kullback's symmetric divergence. Presented at Departmental Colloquium, Department of Statistics, Iowa State University, Ames, Iowa.
- 2004 Cavanaugh, J. E. Criteria for linear model selection based on Kullback's symmetric divergence. Presented at Departmental Colloquium, Department of Statistics, University of Illinois, Urbana-Champaign, Illinois.
- 2005 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Biostatistics, Columbia University, New York, New York.

- 2005 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Statistics, Oklahoma State University, Stillwater, Oklahoma.
- Aug 2005 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic (Contributed Paper). Presented at 2005 Joint Statistical Meetings, Minneapolis, Minnesota.
- Oct 2005 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Biostatistics, University of Iowa, Iowa City, Iowa.
- 2006 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternative version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Statistics and Biostatistics, University of Florida, Gainesville, Florida.
- 2006 Cavanaugh, J. E. Occam's razor and statistical model selection. Presented at Special Biostatistics Seminar, New York State Psychiatric Institute, Columbia University, New York, New York.
- 2006 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Mathematical Sciences, Montana State University, Bozeman, Montana.
- 2006 Cavanaugh, J. E., Neath, A. A. & Davies, S. L. An alternate version of the conceptual predictive statistic. Presented at Departmental Colloquium, Department of Statistics, University of Minnesota, Minneapolis, Minnesota.
- May 2006 Cavanaugh, J. E., Davies, S. L. & Neath, A. A. Discrepancy-based model selection criteria using cross-validation (Invited Paper). Presented at International Conference on Statistical Models for Biomedical and Technical Systems, Limassol, Cyprus.
- Nov 2006 Cavanaugh, J. E., Davies, S. L. & Neath, A. A. Discrepancy-based model selection criteria using cross validation. Presented at Departmental Colloquium, Department of Statistics and Actuarial Sciences, University of Iowa, Iowa City, Iowa.
- 2007 Cavanaugh, J. E., Davies, S. L. & Neath, A. A. Discrepancy-based model selection criteria using cross validation. Presented at Departmental Seminar, Department of Biostatistics and Epidemiology, University of Pennsylvania, Philadelphia, Pennsylvania.
- Feb 2007 Cavanaugh, J. E. Model selection. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Jul 2007 Cavanaugh, J. E. & Bengtsson, T. State-space discrimination and clustering of atmospheric time series data based on Kullback information measures (Topic Contributed Paper). Presented at 2007 Joint Statistical Meetings, Salt Lake City, Utah.
- Nov 2007 Cavanaugh, J. E. Power and sample size assessments. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- 2008 Cavanaugh, J. E., Davies, S. L. & Neath, A. A. Discrepancy-based model selection criteria using cross validation. Presented at Lukacs Visiting Professor Statistics Seminar, Department of Mathematics and Statistics, Bowling Green State University, Bowling Green, Ohio.

- 2008 Cavanaugh, J. E. Occam's razor and statistical model selection. Presented at Lukacs Visiting Professor Statistics Seminar, Department of Mathematics and Statistics, Bowling Green State University, Bowling Green, Ohio.
- Jun 2008 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism (Invited Paper). Presented at 2008 Statistical Conference in Honor of Bob Shumway, University of California, Davis, California.
- Aug 2008 Cavanaugh, J. E. & Bengtsson, T. State-space discrimination and clustering of atmospheric time series data based on Kullback information measures (Topic Contributed Paper). Presented at 2008 Joint Statistical Meetings, Denver, Colorado.
- 2009 An analysis of the Iowa child passenger safety survey based on generalized linear mixed models. Presented at Biostatistics Seminar, New York State Psychiatric Institute, Columbia University, New York, New York.
- 2009 Model selection criteria based on computationally intensive estimators of the expected optimism. Presented at Departmental Seminar, Department of Biostatistics, Columbia University, New York, New York.
- 2009 Cavanaugh, J. E. & Bengtsson, T. State-space discrimination and clustering of atmospheric time series data based on Kullback information measures. Presented at Departmental Colloquium, Department of Statistics, University of California, Irvine, California.
- Sep 2009 Cavanaugh, J. E. Multivariable modeling. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Dec 2009 Cavanaugh, J. E. Careers in Biostatistics. Explorations in Computing, Mathematics, and Science. University of Iowa, Iowa City, Iowa.
- Mar 2010 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism. Presented at Departmental Colloquium, Department of Statistics and Actuarial Sciences, University of Iowa, Iowa City, Iowa.
- Apr 2010 Cavanaugh, J. E. Multiple comparisons. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- 2011 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism. Presented at Departmental Colloquium, Department of Statistics, University of Missouri, Columbia, Missouri.
- May 2011 Cavanaugh, J. E., Foster, E. D., Yang, M. & Polgreen, P. M. A Time Series Analysis to Investigate the Relationship between Acute Myocardial Infarction Incidence and Influenza Activity (Invited Paper). Presented at International Conference on Risk Analysis, Limassol, Cyprus.
- Oct 2011 Cavanaugh, J. E. Multivariable modeling. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Mar 2012 Cavanaugh, J. E. Occam's razor and statistical model selection. Presented at Seminar, Institute for Quantitative Biology, East Tennessee State University, Johnson City, Tennessee.

- Jul 2012 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism. Presented at ICNPAA Congress: Mathematical Problems in Engineering, Aerospace and Sciences (Invited Paper), Vienna, Austria.
- Oct 2012 Cavanaugh, J. E. Multivariable modeling. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Feb 2013 Cavanaugh, J. E. Biostatistics and public health. Presented at MPH Professional Development Seminar, University of Iowa College of Public Health, Iowa City.
- Feb 2013 Cavanaugh, J. E. Power and sample size assessments/Multiple inference procedures. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Aug 2013 Cavanaugh, J. E. & Neath, A. A. Model selection criteria based on computationally intensive estimators of the expected optimism (with an application to the use of biomarkers for treatment evaluation) (Invited Paper). Presented at 59th ISI World Statistics Congress, International Statistical Institute, Hong Kong, China.
- Aug 2013 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism (with an application to the use of biomarkers for treatment evaluation) (Topic Contributed Paper). Presented at 2013 Joint Statistical Meetings, American Statistical Association, Montreal, Canada.
- Sep 2013 Cavanaugh, J. E., Yang, M. & Zamba, G. J. State-space models for count time series with excess zeros (Invited Paper). Presented at Frontiers in Methodological and Applied Statistics: A Celebration of 50 Year of MU's Department of Statistics, University of Missouri, Columbia, Missouri.
- Dec 2013 Cavanaugh, J. E. Multivariable modeling. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- Mar 2014 Cavanaugh, J. E. Mixed effects and hierarchical modeling. Presented at Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research/University of Iowa, Iowa City, Iowa.
- May 2014 Cavanaugh, J. E. Occam's razor and statistical model selection. Presented at Seminar in Applied Mathematics and Computations Sciences, University of Iowa, Iowa City, Iowa.
- May 2015 Cavanaugh, J. E., Yang, M. & Zamba, G. K. State-space models for count time series with excess zeros. Presented at International Conference On Differential Equations and Dynamical Systems, Dallas, Texas.
- Jul 2015 Cavanaugh, J. E., Yang, M. & Zamba, G. K. State-Space Models for Count Time Series with Excess Zeros. Presented at Applied Stochastic Models and Data Analysis International Conference, Piraeus, Greece.
- Aug 2018 Cavanaugh, J. E. Model Selection Criteria based on Symmetrized Variants for Asymmetric Divergence Measures. Presented at Joint Statistical Meetings, American Statistical Association, Vancouver, BC, Canada.

Seminars

- 2007 Model Selection. Seminar in Clinical Research, Iowa Scholars in Clinical Investigation. University of Iowa, Iowa City, Iowa.

- 2007 Power and sample size assessments. Seminar in Clinical and Translational Research, Iowa Scholars in Clinical Investigation. University of Iowa, Iowa City, Iowa.
- 2009 Multivariable modeling. Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research. University of Iowa, Iowa City, Iowa.
- 2010 Multiple comparisons. Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research. University of Iowa, Iowa City, Iowa.
- 2011 Multivariable modeling. Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research. University of Iowa, Iowa City, Iowa.
- 2012 Multivariable modeling. Seminar in Clinical and Translational Research, Institute for Clinical and Translational Research. University of Iowa, Iowa City, Iowa.
- Apr 2015 Cavanaugh, J. E. Model selection criteria based on computationally intensive estimators of the expected optimism. Presented at Departmental Seminar, Department of Biostatistics, Penn State University, Hershey, Pennsylvania.
- Mar 2019 Cavanaugh, J. E., Zamba, K. D., Yang, M. & Tang, F. Models for Overdispersed Count time Series with Excess Zeros. Presented at Departmental Seminar, Department of Biostatistics, Indiana University, Indianapolis, Indiana.
- May 2019 Cavanaugh, J. E. Biostatistics: An Applied Mathematical and Computational Science on the Interface of Biomedicine and Public Health. Presented at Departmental Seminar, Applied Mathematics and Computational Sciences, University of Iowa, Iowa City, Iowa.

Other Presentations

- Aug 2003 Cavanaugh, J. E. & Davis, J. W. Time-frequency discrimination of nonstationary processes based on wavelets (Invited Technical Exhibit). Presented at 2003 Joint Statistical Meetings, American Statistical Association, San Francisco, California.
- Nov 2022 Cavanaugh, J. E. Reassessing Health Sciences Research: Moving beyond p-Values and Statistical Significance. College of Public Health, Iowa City, Iowa.

Service

Professional Service

Professional Organizations

- 1993 - 2003 Mid-Missouri Chapter of American Statistical Association, Treasurer 1995-2000, 2003; President 2000-2002
- 1993 - Present American Statistical Association, Member
- 1993 - Present Institute of Mathematical Statistics, Member
- 2002 - Present American Academy for the Advancement of Science, Member
- 2005 - Present Eastern North American Region International Biometric Society (ENAR), Member
- 2011 - Present Spanish National Biostatistics Network (BIOSTATNET), Member
- 2014 - Present American Statistical Association, Fellow
- 2016 - Present International Biometric Society, Member

Journal Reviews/Referee Manuscripts

2001	Advanced Linear Modeling (Second Edition), Publisher Reviewer
2016	Modeling and Prediction: Honoring Seymour Geisser, Reviewer
2016	Statistical Methods for Modeling Human Dynamics: An Interdisciplinary Dialogue, Reviewer
2016	Statistical Models and Methods for Biomedical and Technical Systems, Reviewer
2010 - Present	Afrika Statistika, Reviewer
2010 - Present	Annals of the Institute for Statistical Mathematics, Reviewer
2010 - Present	Atmospheric Environment, Reviewer
2010 - Present	Australian and New Zealand Journal of Statistics, Reviewer
2010 - Present	Automatica, Reviewer
2010 - Present	Bayesian Analysis, Reviewer
2010 - Present	Bernoulli, Reviewer
2010 - Present	Biometrics, Reviewer
2010 - Present	Canadian Journal of Statistics, Reviewer
2010 - Present	Circulation, Reviewer
2010 - Present	Communications in Statistics - Theory and Methods, Reviewer
2010 - Present	Computational Statistics, Reviewer
2010 - Present	Computational Statistics and Data Analysis, Reviewer
2010 - Present	Epidemiology and Infection, Reviewer
2010 - Present	Geophysical Research Letters, Reviewer
2010 - Present	IEEE Transactions on Information Theory, Reviewer
2010 - Present	IEEE Transactions on Neural Networks, Reviewer
2010 - Present	IEEE Transactions on Reliability, Reviewer
2010 - Present	IEEE Transactions on Signal Processing, Reviewer
2010 - Present	IEEE Transactions on Systems and Circuits I, Reviewer
2010 - Present	Johns Hopkins APL Technical Digest, Reviewer
2010 - Present	Journal of Applied Meteorology and Climatology, Reviewer
2010 - Present	Journal of Computational and Graphical Statistics, Reviewer
2010 - Present	Journal of Multivariate Analysis, Reviewer
2010 - Present	Journal of Nonparametric Statistics, Reviewer
2010 - Present	Journal of Statistical Computation and Simulation, Reviewer
2010 - Present	Journal of Statistical Planning and Inference, Reviewer
2010 - Present	Journal of the American Statistical Association, Reviewer
2010 - Present	Journal of Time Series Analysis, Reviewer
2010 - Present	Metrika, Reviewer

2010 - Present	Psychometrika, Reviewer
2010 - Present	Scandinavian Journal of Statistics, Reviewer
2010 - Present	Signal Processing, Reviewer
2010 - Present	South African Statistical Journal, Reviewer
2010 - Present	Statistica Neerlandica, Reviewer
2010 - Present	Statistica Sinica, Reviewer
2010 - Present	Statistical Modelling, Reviewer
2010 - Present	Statistics, Reviewer
2010 - Present	Statistics & Probability Letters, Reviewer
2010 - Present	Statistics in Medicine, Reviewer
2010 - Present	Statistics Surveys, Reviewer
2010 - Present	Stochastic Environmental Research & Risk Assessment, Reviewer
2010 - Present	Technometrics, Reviewer
2010 - Present	The American Statistician, Reviewer
2015 - Present	Journal of the American Statistical Association, Reviewer
2017 - Present	Sankhya A: The Indian Journal of Statistics, Reviewer
2019 - Present	Biostatistics, Reviewer
2020 - Present	Annals of Applied Statistics, Reviewer
2020 - Present	Journal of Forecasting, Reviewer
2020 - Present	Journal of Applied Statistics, Reviewer
2021 - Present	Computational and Graphical Statistics, Reviewer

Review Panels

	Grant Proposals, National Science Foundation, National Security Agency, the University of Iowa College of Public Health/College of Medicine New Investigator Program, and the University of Missouri Research Board, Reviewer
1998	Academic Symposium to Evaluate Evidence Regarding the Efficacy of Trauma Systems, Department of Surgery, University of Missouri-Columbia, Attendee
2004	Independent expert panel to evaluate organ transplantation simulation models, Division of Transplantation, Health Resources and Services Administration, US Department Health and Human Services, Member
2013	Committee to Evaluate a Proposed Doctoral Program in Biostatistics, University of Georgia, Reviewer

Organize Conferences, Sessions, etc.

2002	Biometrical Applications of Modern Time Series Methodologies, Western North American Region of the Biometrics Society, Organizer
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National/International Committees

2002 - 2005 Section on Industrial Science and Technology, American Academy for the Advancement of Science, American Statistical Association Representative

Professionally Relevant Community Involvement

2005 Redesign Iowa Child Passenger Restraint Survey, Iowa Governor's Traffic Safety Bureau, Participant

Other

2001 Hiring Rank Evaluation of Faculty Candidate, Columbia University

2003 Contributed poster judge at 2003 Joint Statistical Meetings

2005 Evaluated promotion case for a faculty candidate at Southern Illinois University-Edwardsville

2005 - 2007 The Journal of the American Statistical Association, Associate Editor for the Reviews Section

2007 Evaluated tenure case for a faculty candidate at Columbia University

2008 Visited the Department of Mathematics and Statistics at Bowling Green State University as the Eugene Lukacs Visiting Professor of Statistics

2009 Evaluated promotion/tenure case for a faculty candidate at Connecticut College

2009 Served on a three-member advisory committee to the Kansas Board of Regents to evaluate proposed graduate programs in biostatistics at the University of Kansas

2009 Evaluated promotion/tenure case for a faculty candidate at University of Kansas, University of Kansas

2005 - 2010 The American Statistician, Associate Editor for the Reviews Section

2010 Evaluated promotion/tenure case for a faculty candidate at Montana State University, Montana State University

2010 Evaluated promotion/tenure case for a faculty candidate at University of Missouri, University of Missouri

2011 Evaluated promotion/tenure case for a faculty candidate at Clemson University

2011 Evaluated promotion/tenure case for a faculty candidate at University of Kansas

2011 Evaluated promotion/tenure case for a faculty candidate at University of Maryland Baltimore County

2011 Evaluated promotion/tenure case for a faculty candidate at Pomona College, Pomona College

2011 Evaluated promotion/tenure case for a faculty candidate at University of Buffalo, University of Buffalo

2009 - 2013 Data Safety Monitoring Board for a Multicenter Phase I Clinical Trial, University of Kansas

2013 Evaluated promotion and/or tenure case for faculty candidate at University of Cyprus

2013 Evaluated promotion and/or tenure case for faculty candidate at University of Colorado Denver

- 2013 Evaluated promotion and/or tenure case for faculty candidate at New York University
- 2013 Served as a Reviewer for the Board of Regents, University System of Georgia, Reviewer
- 2014 Evaluated promotion and/or tenure case for faculty candidate at National Technical University of Athens
- 2014 Evaluated promotion and/or tenure cases for faculty candidates at Georgetown University
- 2014 Evaluated promotion and/or tenure cases for faculty candidates at University of Georgia
- 2014 Evaluated promotion/tenure case for a faculty candidate at University of Maryland Baltimore County
- 2015 Evaluated promotion and/or tenure cases for faculty candidates at Towson University
- 2015 Evaluated promotion and/or tenure cases for faculty candidates at University of Michigan
- 2015 Evaluated promotion and/or tenure cases for faculty candidates at University of New Mexico
- 2015 Evaluated promotion/tenure case for a faculty candidate at University of Michigan
- 2016 Evaluated promotion and/or tenure cases for faculty candidates at Clemson University
- 2016 Evaluated promotion and/or tenure cases for faculty candidates at Oregon State University
- 2016 Evaluated promotion and/or tenure cases for faculty candidates at University of Kansas
- 2018 Evaluated promotion and/or tenure cases for faculty candidates at Towson University
- 2019 Evaluated promotion and/or tenure cases for faculty candidates at New York University
- 2019 Evaluated promotion and/or tenure cases for faculty candidates at Seoul National University
- 2019 Evaluated promotion and/or tenure cases for faculty candidates at Towson University
- 2019 Evaluated promotion and/or tenure cases for faculty candidates at University of Michigan
- 2019 Evaluated promotion and/or tenure cases for faculty candidates at University of Missouri
- 2020 Evaluated promotion and/or tenure cases for faculty candidates at Cleveland Clinic
- 2020 Evaluated promotion and/or tenure cases for faculty candidates at University of Massachusetts-Amherst
- 2020 Evaluated promotion and/or tenure cases for faculty candidates at Indiana University
- 2019 - 2021 Committee to select annual recipient of the Karl E. Peace Award for Outstanding Statistical Contributions for the Betterment of Society, American Statistical Association, Chair
- 2021 Evaluated promotion and/or tenure cases for faculty candidates at East Tennessee State University

2021	Evaluated promotion and/or tenure cases for faculty candidates at Colorado State University
2021	Evaluated promotion and/or tenure cases for faculty candidates at University of North Carolina at Chapel Hill
2021	Evaluated promotion and/or tenure cases for faculty candidates at Texas A&M University
2021	Evaluated promotion and/or tenure cases for faculty candidates at Trinity University
2021	Evaluated promotion and/or tenure cases for faculty candidates at University of Kansas
2022	Evaluated promotion and/or tenure cases for faculty candidates at University of Wisconsin-Milwaukee
1999 - Present	Journal of Forecasting, Associate Editor
2011 - Present	The American Statistician, Associate Editor
2015 - Present	National Alliance for Doctoral Studies in the Mathematical Sciences, Mentor

University, College, Department Service

University

2001 - 2002	Designed bachelor's degrees in Applied Statistics (first offered during the 2001-02 academic year), University of Missouri-Columbia, Member
2003	Research Council, University of Missouri, Member
2004 - 2005	CPH/COM New Investigator Research Award Committee, College of Public Health, University of Iowa, Member
2004 - 2007	Iowa Scholars in Clinical Investigation Program, The University of Iowa, Biostatistician
Aug 2005 - Jun 2009	College of Dentistry, University of Iowa, Biostatistician
Jul 2009 - May 2014	Research Education, Training and Career Development Key Function, Institute for Clinical and Translational Science, University of Iowa, Biostatistician
2020 - 2021	Led the University of Iowa College of Public Health COVID-19 Response Group in modeling COVID-19 incidence, hospitalizations, and mortality for the Iowa Department of Public Health
Jan 2006 - Present	Executive Committee, Injury Prevention Research Center, Member
2008 - Present	Cancer Pain in Elders, University of Iowa, College of Nursing, Biostatistical Consultant
2009 - Present	Data Safety Monitoring Board for a Multicenter Phase II Clinical Trial, University of Iowa, Member
2009 - Present	Data Safety Monitoring Board for Two Multicenter Intervention Study, University of Iowa, Member
2011 - Present	Iowa Summer Institute in Biostatistics, Iowa Summer Institute in Biostatistics, Faculty Mentor
Jan 2014 - Present	University of Iowa Sloan Center for Exemplary Mentoring, Member
Jun 2016 - Present	Injury and Violence Methods Team for the Injury Prevention Research Center, Co-Chair

Jul 2017 - Present Biostatistics, Epidemiology, and Research Design (BERD) operations team for the Institute for Clinical and Translational Science, University of Iowa, Iowa City, Iowa, Co-Director

College

2004 - 2005 CPH Awards Committee, Member

2005 HMP Departmental Review Committee, College of Public Health, University of Iowa, Member

2010 - 2014 Promotion and Tenure Collegiate Consulting Groups for five promotion applications, College of Public Health, Member

Aug 2017 - Jun 2018 CPH Dean Search Committee, Co-Chair

2014 - Present CPH Executive Committee, Iowa City, Iowa, Member

2017 - Present CPH Statistical Methods Course Task Force, Member

Department

1998 - 1999 Director of Graduate Studies, Graduate Admissions, and Financial Support, Department of Statistics, University of Missouri-Columbia

1995 - 2003 Statistics Graduate Student Association, University of Missouri-Columbia, Faculty Advisor

2003 - 2004 Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2006 Committee to Evaluate the Web-Based Version of Introduction to Biostatistics (171:161), University of Iowa, Chair

2006 DCG Tenure Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2005 - 2007 Biostatistics Computing Committee, Department of Biostatistics, College of Public Health, University of Iowa, Co-Chair

2006 - 2007 Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2007 DCG Tenure Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2005 - 2008 Biostatistics Admissions & Recruitment Committee, The University of Iowa, Chair

2005 - 2008 MS and PhD Curriculum Committee, University of Iowa, Member

2008 Biostatistics Faculty Search Committee for Clinical Trials, Department of Biostatistics, College of Public Health, University of Iowa, Member

2008 Recruitment and Admissions Committee, The University of Iowa, Chair

2008 - 2009 DEO Search Committee, Department of Community and Behavioral Health, College of Public Health, University of Iowa, Member

2008 - 2009 Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2011 - 2012 Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member

2013 - 2014	Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member
2006 - 2015	Admissions and Student Recruitment Committee (Chair 2006-2012), Department of Biostatistics, University of Iowa, Iowa City, Iowa, Member
2014 - 2015	Faculty Search Committee, Department of Biostatistics, College of Public Health, University of Iowa, Member
Jan 2004 - Dec 2015	Awards Committee, College of Public Health, University of Iowa, Member
Jan 2009 - Dec 2015	Awards Committee, College of Public Health, University of Iowa, Chair
2016 - 2017	Faculty Search Committee, Co-Chair
2016 - 2017	Ph.D. Comprehensive Exam Steering Committee, Member
Sep 2017 - Aug 2018	Ph.D. Comprehensive Exam Steering Committee (Summer 2018), Member
Sep 2020 - Aug 2021	Ph.D. Comprehensive Exam Steering Committee (Summer 2021), Member
Sep 2020 - Aug 2021	Ph.D. Comprehensive Exam Steering Committee (Summer 2021), Member
Sep 2022 - Aug 2023	Ph.D. Comprehensive Exam Steering Committee (Summer 2023), Member
2005 - Present	Executive Committee, Injury Prevention Research Center, Department of Occupational and Environmental Health, College of Public Health, University of Iowa, Member
2005 - Present	Ph.D. Comprehensive Examination Committee (Chair, 2005, 2006, 2014), University of Iowa, Member
2012 - Present	Biostatistics Student Awards Committee (Chair 2017-2022), Member
2014 - Present	Biostatistics Colloquium Committee, Member
2016 - Present	Biostatistics Administrative Committee (DEO), Member
2016 - Present	Biostatistics Social Events Committee, Member
2016 - Present	Ph.D. Curriculum Review Committee, Co-Chair
2017 - Present	Biostatistics Admissions and Student Recruitment Committee, Department of Biostatistics, University of Iowa, Iowa City, Iowa, Member
Sep 2017 - Present	Faculty Search Committee 2017-2019, Co-Chair
2019 - Present	Ph.D. Comprehensive Examination Review Committee, Co-Chair