Curriculum Vitae

Andrew Gelman

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Education

Harvard University, 1986–1990. M.A., statistics, 1987. Ph.D., statistics, 1990. Thesis: Topics in image reconstruction for emission tomography.

Massachusetts Institute of Technology, 1982–1986. S.B., mathematics, 1985. S.B., physics, 1986.

Positions

Higgins Professor of Statistics, Columbia University, 2017-present.

Professor, Department of Political Science, Columbia University, 2002-present.

Professor, Department of Statistics, Columbia University, 2000-present.

Visiting Professor, Department of Statistics, Harvard University, 2008, 2012

Alliance Visiting Professor, Sciences Po, Paris, 2009–2010.

Founding Director, Applied Statistics Center, Columbia University, 2006–present.

Faculty Fellow, Institute for Social and Economic Research and Policy, Columbia University, 1999–present.

Founding Director, Quantitative Methods in Social Sciences program, Columbia University, 1998–2002.

Associate Professor, Department of Statistics, Columbia University, 1996–2000.

Visiting Assistant Professor, Department of Statistics, University of Chicago, 1994.

Assistant Professor, Department of Statistics, University of California, Berkeley, 1990–1996.

Technical Associate, AT&T Bell Laboratories, summers, 1985–1986.

Honors and awards

- 2022 Getis-Ord Lecture in Spatial Analysis: "Understanding spatial models in context."
- 2020 Elected Member of American Academy of Arts and Sciences.
- 2020 Youden Award in Interlaboratory Testing from the American Statistical Association for "Bayesian aggregation of average data: An application in drug development." (Sebastian Weber, Andrew Gelman, Daniel Lee, Michael Betancourt, Aki Vehtari, and Amy Racine-Poon)
- 2019 Article "Ethics in statistical practice and communication" chosen for *The Best Writing on Mathematics 2019*.
- 2018 Hedges Lecture for the Society of Research on Educational Effectiveness: "Evidence-based practice is a two-way street."
- 2017 Article "The statistical crisis in science: How is it relevant to clinical neuropsychology?" chosen for the Continuing Education program of the American Academy of Clinical Neuropsychology. (Andrew Gelman and Hilde Geurts)
- 2016 DeGroot Prize from the International Society of Bayesian Analysis for Bayesian Data Analysis, third edition. (Andrew Gelman, John B. Carlin, Hal S. Stern, David B. Dunson, Aki Vehtari, Donald B. Rubin).
- 2016 Article "Why acknowledging uncertainty can make you a better scientist" chosen for *The Best Writing on Mathematics 2016*.
- 2015 Article "The statistical crisis in science" chosen for *The Best Writing on Mathematics 2015*. (Andrew Gelman and Eric Loken)
- 2014 Statistician of the Year, Chicago chapter of the American Statistical Association.
- 2014 Elected member, International Statistical Institute.
- 2012 Open Source Software World Challenge award for Stan: An R and C++ package for Bayesian sampling. (Andrew Gelman, Bob Carpenter, Matt Hoffman, Daniel Lee, Michael Malecki, Ben Goodrich, Michael Betancourt, Marcus Brubaker, and Jiqiang Guo)
- 2011 Blog of the Year award from *The Week* for the Monkey Cage. (John Sides, Henry Farrell, Andrew Gelman, Joshua Tucker, and Erik Voeten)
- 2010 Mitchell Lecturer, Department of Statistics, University of Glasgow.
- 2008 Mitchell Prize from the International Society of Bayesian Analysis for "How many people do you know in prison?: Using overdispersion in count data to estimate social structure in networks." (Tian Zheng, Matthew Salganik, and Andrew Gelman)
- 2008 Outstanding Statistical Application award from the American Statistical Association for "How many people do you know in prison?: Using overdispersion in count data to estimate social structure in networks." (Tian Zheng, Matthew Salganik, and Andrew Gelman)
- 2006 Otis Dudley Duncan Honorary Lecture for the American Sociological Association: "Bayesian inference and multilevel modeling."
- 2004 Miller Prize for the best work appearing in *Political Analysis*, for "Bayesian multilevel estimation with poststratification: State-level estimates from national polls." (David K. Park, Andrew Gelman, and Joseph Bafumi)

- 2003 Committee of Presidents of Statistical Societies (COPSS) Presidents' award for outstanding contributions to statistics by a person under the age of 40.
- 2000 Outstanding Statistical Application award from the American Statistical Association for "Not asked and not answered: multiple imputation for multiple surveys." (Andrew Gelman, Gary King, and Chuanhai Liu)
- 2000 Special Invited Lecture for the Institute of Mathematical Statistics: "Analysis of variance: Why it is more important than ever."
- 1998 Elected Fellow, American Statistical Association.
- 1998 Outstanding Statistical Application award from the American Statistical Association for "Physiological pharmacokinetic analysis using population modeling and informative prior distributions." (Andrew Gelman, Frederic Y. Bois, and Jiming Jiang)
- 1998 Article "Not asked and not answered: Multiple imputation for multiple surveys" chosen as the annual *Journal of the American Statistical Association* special invited discussion paper. (Andrew Gelman, Gary King, and Chuanhai Liu)
- 1998 Article "General methods for monitoring convergence of iterative simulations" chosen for the "Best of *Journal of Computational and Graphical Statistics*" session at the annual Interface meeting. (Stephen Brooks and Andrew Gelman)
- 1997 Elected Fellow, Institute of Mathematical Statistics.
- 1995 Heinz Eulau Award from the American Political Science Association for the best article published in the American Political Science Review, for "Enhancing Democracy Through Legislative Redistricting." (Andrew Gelman and Gary King)
- 1994 National Science Foundation Young Investigator Award.
- 1992 American Political Science Association research software award, for "JudgeIt: a program for evaluating electoral systems and redistricting plans." (Andrew Gelman and Gary King)
- 1992 Pi Sigma Alpha award for the best paper presented at the annual meeting of the Midwest Political Science Association, for "Why do Presidential election campaign polls vary so much when the vote is so predictable?" (Andrew Gelman and Gary King)

Principal investigator on research grants

- 2021–2024 National Science Foundation grant, "Revamped Bayesian Inference." (Ben Goodrich and Andrew Gelman)
- 2021–2013 Bureau of Labor Statistics grant, "Surveys at scale: Laplace approximation and Hamiltonian Monte Carlo for multilevel regression and postratification." (Andrew Gelman)
- 2021–2022 National Science Foundation grant, "Flexible, efficient, and available Bayesian computation for epidemic models." (Andrew Gelman)
- 2020–2021 National Science Foundation grant, "Scalable systems for probabilistic programming." (Andrew Gelman, Tamara Broderick, Michael Carbin, and Vivienne Sze)
- 2020–2023 National Institutes of Health grant, "Improving representativeness in non-probability surveys and causal inference with regularized regression and post-stratification." (Andrew Gelman, Qixuan Chen, and Lauren Kennedy)

- 2019–2022 National Science Foundation grant, "Bayesian analytical tools to improve survey estimates for subpopulations and small areas." (Andrew Gelman, Bob Carpenter, and Stephen Ansolabehere)
- 2019–2022 Institute of Education Sciences grant, "Efficient and flexible tools for complex multilevel and latent variable modeling in education research." (Andrew Gelman and Sophia Rabe-Hesketh)
- 2019–2022 Office of Naval Research grant, "Informative priors for Bayesian inference, regularization, and computation." (Andrew Gelman)
- 2017–2020 National Science Foundation grant, "Stan for the long run." (Bob Carpenter and Andrew Gelman)
- 2017–2020 Office of Naval Research grant, "Causal inference using hierarchical and nonparametric Bayesian interaction models." (Andrew Gelman and Jennifer Hill)
- 2015–2018 National Science Foundation grant, "Multilevel regression and poststratification: A unified framework for survey weighted inference." (Yajuan Si and Andrew Gelman)
- 2015–2018 Sloan Foundation grant, "Stan." (Andrew Gelman, Bob Carpenter, Michael Betancourt, and Daniel Lee)
- 2015–2018 Office of Naval Research grant, "Informative priors for Bayesian inference and regularization." (Andrew Gelman)
- 2014–2017 Institute of Education Sciences grant, "Solving difficult Bayesian computation problems in education research using Stan." (Andrew Gelman, Bob Carpenter, and Sophia Rabe-Hesketh)
- 2014–2017 National Science Foundation grant, "Using multilevel regression and poststratification to measure and study dynamic public opinion." (Justin Phillips, Andrew Gelman, and Jeffrey Lax)
- 2012–2015 National Science Foundation grant, "Stan: A computing framework for Bayesian modeling." (Andrew Gelman, Bob Carpenter, and Matt Hoffman)
- 2012–2017 Institute of Education Sciences grant, "NYU/Columbia quantitative postdoctoral training program." (Andrew Gelman and Jennifer Hill)
- 2010–2013 National Science Foundation grant, "Latent space models for aggregated relational data in social sciences." (Tian Zheng and Andrew Gelman)
- 2010–2012 National Science Foundation grant, "Understanding public opinion and policymaking using multilevel regression and poststratification." (Justin Phillips, Andrew Gelman, and Jeffrey Lax)
- 2010–2013 Institute of Education Sciences grant, "Practical tools for multilevel/hierarchical modeling in education research." (Andrew Gelman, Sophia Rabe-Hesketh, and Jingchen Liu)
- 2009–2012 Department of Energy grant, "Petascale hierarchical modeling via parallel execution." (Andrew Gelman, Viral Shah, Alan Edelman, and Chad Scherrer)
- 2009–2011 National Security Agency grant, "Weakly informative priors." (Andrew Gelman)
- 2009–2012 National Science Foundation grant, "Reconstructing climate from tree ring data." (Andrew Gelman, Matthew Schofield, Upmanu Lall, and Ed Cook)
- 2009–2012 Institute of Education Sciences grant, "Practical solutions for missing data." (Andrew Gelman and Jennifer Hill)

- 2007–2008 Yahoo research grant, "Purple America." (Andrew Gelman)
- 2006–2009 National Institutes of Health grant, "Bayesian analysis of serial dilution assays." (Andrew Gelman, Ginger Chew, and Matt Perzanowski)
- 2005–2008 National Science Foundation grant, "Design and analysis of 'How many X's do you know' surveys for the study of polarization in social networks." (Andrew Gelman, Tian Zheng, Thomas DiPrete, and Julien Teitler)
- 2003–2006 National Science Foundation grant, "Multilevel modeling for the analysis of public opinion and voting." (Andrew Gelman)
- 2000–2003 National Science Foundation grant, "Combining expert judgments for environmental risk analysis." (James Hammitt, Robert Clemen, Andrew Gelman, John Evans, and Roger Cooke)
- 2000–2003 National Science Foundation grant, "Bayesian analysis of sample surveys." (Andrew Gelman and John B. Carlin)
- 1997–2000 National Science Foundation grant, "Models and model checking for spatially-varying environmental hazards and decision problems." (Andrew Gelman and Phillip N. Price)
- 1994–1997 National Science Foundation grant, "Using inference from iterative simulation to improve efficiency of simulations." (Andrew Gelman and Donald B. Rubin)
- 1993–1995 National Science Foundation grant, "Generalizing multiple imputation for a time series of surveys, with application to Presidential election campaign polls and evaluating electoral systems and redistricting plans." (Gary King and Andrew Gelman)
- 1992–1993 University of California, Berkeley, Junior Faculty Research Grant.
- 1990–1993 National Science Foundation mathematical sciences postdoctoral fellowship.

Books

- 2020 Regression and Other Stories. Cambridge University Press. (Andrew Gelman, Jennifer Hill, and Aki Vehtari)
- 2017 Teaching Statistics: A Bag of Tricks, second edition. Oxford University Press. (Andrew Gelman and Deborah Nolan).
- 2013 Bayesian Data Analysis, third edition. London: CRC Press. (Andrew Gelman, John B. Carlin, Hal S. Stern, David B. Dunson, Aki Vehtari, Donald B. Rubin).
- 2008 Red State, Blue State, Rich State, Poor State: Why Americans Vote the Way They Do. Princeton University Press. (Andrew Gelman, David Park, Boris Shor, Joseph Bafumi, and Jeronimo Cortina). Expanded edition, 2009.
- 2007 Data Analysis Using Regression and Multilevel/Hierarchical Models. Cambridge University Press. (Andrew Gelman and Jennifer Hill).
- 2003 Bayesian Data Analysis, second edition. London: CRC Press. (Andrew Gelman, John B. Carlin, Hal S. Stern, and Donald B. Rubin).
- 2002 Teaching Statistics: A Bag of Tricks. Oxford University Press. (Andrew Gelman and Deborah Nolan).
- 1995 Bayesian Data Analysis. London: Chapman and Hall. (Andrew Gelman, John B. Carlin, Hal S. Stern, and Donald B. Rubin).

Books edited

- 2011 Handbook of Markov Chain Monte Carlo. London: CRC Press. (ed. Stephen Brooks, Andrew Gelman, Galin Jones, and Xiao-Li Meng)
- 2009 A Quantitative Tour of the Social Sciences. Cambridge University Press. (ed. Andrew Gelman and Jeronimo Cortina)
- 2004 Applied Bayesian Modeling and Causal Inference from Incomplete-Data Perspectives. New York: Wiley. (ed. Andrew Gelman and Xiao-Li Meng)

Articles

- 2022 Criticism as asynchronous collaboration: An example from social science research. *Stat.* (Andrew Gelman)
- 2022 Beyond vaccination rates: A synthetic random proxy metric of total SARS-CoV-2 immunity seroprevalence in the community. *Epidemiology.* (Yajuan Si, Leonard Covello, Siquan Wang, Theodore Covello, and Andrew Gelman)
- 2022 Stacking for non-mixing Bayesian computations: The curse and blessing of multimodal posteriors. *Journal of Machine Learning Research*. (Yuling Yao, Aki Vehtari, and Andrew Gelman)
- 2022 Reconciling evaluations of the Millennium Villages Project. *Statistics and Public Policy*. (Andrew Gelman, Shira Mitchell, Jeffrey D. Sachs, and Sonia Sachs)
- 2022 Inference from non-random samples using Bayesian machine learning. *Journal of Survey Statistics and Methodology*. (Yutao Liu, Andrew Gelman, and Qixuan Chen)
- 2022 The Great Society, Reagan's revolution, and generations of presidential voting. *American Journal of Political Science*. (Yair Ghitza, Andrew Gelman, and Jonathan Auerbach)
- 2021 Ethical requirements of a research assistant who is concerned about the behavior of a supervisor. Chance 34 (4), 21–22. (Andrew Gelman)
- 2021 Challenges in incorporating exploratory data analysis into statistical workflow (with discussion and rejoinder). *Harvard Data Science Review* **3** (3). (Jessica Hullman and Andrew Gelman)
- 2021 Failure and success in political polling and election forecasting. *Statistics and Public Policy*. (Andrew Gelman)
- 2021 Bayesian hierarchical stacking: Some models are (somewhere) useful. Bayesian Analysis. (Yuling Yao, Gregor Pirš, Aki Vehtari, and Andrew Gelman)
- 2021 A fast linear regression via SVD and marginalization. *Computational Statistics*. (Philip Greengard, Andrew Gelman, and Aki Vehtari)
- 2021 How to embrace variation and accept uncertainty in linguistic and psycholinguistic data analysis. *Linguistics*. (Shravan Vasishth and Andrew Gelman)
- 2021 Accounting for uncertainty during a pandemic. *Patterns.* (Jon Zelner, Julien Riou, Ruth Etzioni, and Andrew Gelman)
- 2021 Research on registered report research. *Nature Human Behaviour*. (Megan Higgs and Andrew Gelman)

- 2021 What are the most important statistical ideas of the past 50 years? Journal of the American Statistical Association. (Andrew Gelman and Aki Vehtari)
- 2021 A proposal for informative default priors scaled by the standard error of estimates. *American Statistician*. (Erik van Zwet and Andrew Gelman)
- 2021 A simple explanation for declining temperature sensitivity with warming. Global Change Biology. (E. M. Wolkovich, J. L. Auerbach, C. J. Chamberlain, D. M. Buonaiuto, A. K. Ettinger, I. Morales-Castilla, and A. Gelman)
- 2021 Routine hospital-based SARS-CoV-2 testing outperforms state-based data in predicting clinical burden. *Epidemiology*. (Len Covello, Andrew Gelman, Yajuan Si, and Siquan Wang)
- 2021 Why did it take so many decades for the behavioral sciences to develop a sense of crisis around methodology and replication? *Journal of Methods and Measurement in the Social Sciences*. (Andrew Gelman and Simine Vazire)
- 2021 Mismatch between scientific theories and statistical models. *Behavioral and Brain Sciences*. (Andrew Gelman)
- 2021 Slamming the sham: A Bayesian model for adaptive adjustment with noisy control data. Statistics in Medicine. (Andrew Gelman and Matthijs Vákár)
- 2021 Social penumbras predict political attitudes. Proceedings of the National Academy of Sciences 118 (6), e2019375118. (Andrew Gelman and Yotam Margalit)
- 2021 Reflections on Lakatos's "Proofs and Refutations." American Mathematical Monthly 128, 191– 192. (Andrew Gelman)
- 2021 Holes in Bayesian statistics. Journal of Physics G: Nuclear and Particle Physics 48, 014002. (Andrew Gelman and Yuling Yao)
- 2021 Reflections on Breiman's Two Cultures of Statistical Modeling. *Observational Studies*. (Andrew Gelman)
- 2021 Bayesian statistics and modelling. Nature Reviews Methods Primers 1, 1. (Rens van de Schoot, Sarah Depaoli, Ruth King, Bianca Kramer, Kaspar Märtens, Mahlet G. Tadesse, Marina Vannucci, Andrew Gelman, Duco Veen, Joukje Willemsen, and Christopher Yau)
- 2021 Community prevalence of SARS-CoV-2 in England: Results from the ONS Coronavirus Infection Survey Pilot. Lancet Public Health. (Koen B. Pouwels, Thomas House, Emma Pritchard, Julie V. Robotham, Paul J. Birrell, Andrew Gelman, Karina-Doris Vihta, Nikola Bowers, Ian Boreham, Heledd Thomas, James Lewis, Iain Bell, John I. Bell, John N. Newton, Jeremy Farrar, Ian Diamond, Pete Benton, Ann Sarah Walker, and the COVID-19 Infection Survey Team)
- 2021 Improving multilevel regression and poststratification with structured priors. *Bayesian Analysis.* (Yuxiang Gao, Lauren Kennedy, Daniel Simpson, and Andrew Gelman)
- 2021 Know your population and know your model: Using model-based regression and poststratification to generalize findings beyond the observed sample. *Psychological Methods*. (Lauren Kennedy and Andrew Gelman)
- 2021 Rank-normalization, folding, and localization: An improved R-hat for assessing convergence of MCMC. *Bayesian Analysis* 16, 667–718. (Aki Vehtari, Andrew Gelman, Daniel Simpson, Bob Carpenter, and Paul-Christian Bürkner)

- 2020 Information, incentives, and goals in election forecasts. Judgment and Decision Making 15, 863–880. (Andrew Gelman, Jessica Hullman, Christopher Wlezien, and George Elliott Morris)
- 2020 An updated dynamic Bayesian forecasting model for the 2020 election. *Harvard Data Science Review* **2** (4). (Merlin Heidemanns, Andrew Gelman, and Elliott Morris)
- 2020 Bayesian hierarchical weighting adjustment and survey inference. Survey Methodology 46, 181–214. (Yajuan Si, Rob Trangucci, Jonah Gabry, and Andrew Gelman)
- 2020 Bayesian analysis of tests with unknown specificity and sensitivity. Journal of the Royal Statistical Society C 69, 1269–1284. (Andrew Gelman and Bob Carpenter)
- 2020 Fallout of lead over Paris from the 2019 Notre-Dame cathedral fire. *GeoHealth* 4 (8). (Alexander van Geen, Yuling Yao, Tyler Ellis, and Andrew Gelman)
- 2020 Evidence vs. truth. Chance 33 (3), 58–60. (Andrew Gelman)
- 2020 Using Bayesian analysis to account for uncertainty and adjust for bias in coronavirus sampling. International Society for Bayesian Analysis Bulletin **27** (2), 11–12. (Andrew Gelman and Bob Carpenter)
- 2020 Data visualization as narrative. Frieze 213. (Andrew Gelman and Helen DeWitt)
- 2020 Lessons learned and remaining challenges for online seminars and conferences. Amstat News, 1 July. (Lauren Kennedy, Guillaume Basse, Andrew Gelman, Guido Imbens, Yajuan Si, Dominik Rothenhausler, and Jan Spiess)
- 2020 Expectation propagation as a way of life: A framework for Bayesian inference on partitioned data. Journal of Machine Learning Research 21, 1–53. (Aki Vehtari, Andrew Gelman, Tuomas Sivula, Pasi Jylanki, Dustin Tran, Swupnil Sahai, Paul Blomstedt, John P. Cunningham, David Schiminovich, and Christian P. Robert)
- 2020 Laplace's theories of cognitive illusions, heuristics, and biases (with discussion and rejoinder). Statistical Science 35, 159–177. (Joshua B. Miller and Andrew Gelman)
- 2020 Statistics as squid ink: How prominent researchers can get away with misrepresenting data. Chance 33 (2), 25–27. (Andrew Gelman and Alexey Guzey)
- 2020 Voter registration databases and MRP: Toward the use of large scale databases in public opinion research. *Political Analysis* 28, 507–531. (Yair Ghitza and Andrew Gelman)
- 2020 A consensus-based transparency checklist. Nature Human Behaviour 4, 561–563. (Balazs Aczel, Barnabas Szaszi, Alexandra Sarafoglou, Zoltan Kekecs, Šimon Kucharský, Daniel Benjamin, Christopher Chambers, Agneta Fisher, Andrew Gelman, et al.)
- 2020 Type M error might explain Weisburd's Paradox. Journal of Quantitative Criminology 36, 295–304. (Andrew Gelman, Torbjørn Skardhamar, and Mikko Aaltonen)
- 2019 Are confidence intervals better termed "uncertainty intervals"? British Medical Journal 366, 15381. (Andrew Gelman and Sander Greenland)
- 2019 When we make recommendations for scientific practice, we are (at best) acting as social scientists. *European Journal of Clinical Investigation* **49** (10), e13165. (Andrew Gelman)
- 2019 Bayesian hierarchical spatial models: Implementing the Besag York Mollié model in Stan. Spatial and Spatio-temporal Epidemiology 31, 100301. (Mitzi Morris, Katherine Wheeler-Martin, Daniel Simpson, Stephen Mooney, Andrew Gelman, and Charles DiMaggio)

- 2019 The experiment is just as important as the likelihood in understanding the prior: A cautionary note on robust cognitive modeling. *Computational Brain and Behavior* **2**, 210–217. (Lauren Kennedy, Daniel Simpson, and Andrew Gelman)
- 2019 Childhood obesity intervention studies: A narrative review and guide for investigators, authors, editors, reviewers, journalists, and readers to guard against exaggerated effectiveness claims. Obesity Reviews 20, 1523–1541. (Andrew Brown, Douglas Altman, Tom Baranowski, J. Martin Bland, John Dawson, Nikhil Dhurandhar, Shima Dowla, Kevin Fontaine, Andrew Gelman, Steven Heymsfield, Wasantha Jayawardene, Scott Keith, Theodore Kyle, Eric Loken, J. Michael Oakes, June Stevens, Diana Thomas, and David Allison)
- 2019 The implementation of randomization requires corrected analyses. Comment on "Comprehensive nutritional and dietary intervention for autism spectrum disorder—A randomized, controlled 12-month trial." Nutrients 11, 1126. (Colby J. Vorland, Andrew W. Brown, Stephanie L. Dickinson, Andrew Gelman, and David B. Allison)
- 2019 Objective Randomised Blinded Investigation With Optimal Medical Therapy of Angioplasty in Stable Angina (ORBITA) and coronary stents: A case study in the analysis and reporting of clinical trials. *American Heart Journal* **214**, 54–59. (Andrew Gelman, John Carlin, and Brahmajee Nallamothu)
- 2019 The principles of uncertainty. Review of "Do Dice Play God," by Ian Stewart. Nature 569, 628–629. (Andrew Gelman)
- 2019 Post-hoc power using observed estimate of effect size is too noisy to be useful. Annals of Surgery 270, e64. (Andrew Gelman)
- 2019 Multiple perspectives on inference for two simple statistical scenarios. American Statistician 73 (S1), 328–339. (Noah N. N. van Dongen, Johnny B. van Doorn, Quentin F. Gronau, Don van Ravenzwaaij, Rink Hoekstra, Matthias N. Haucke, Daniel Lakens, Christian Hennig, Richard D. Morey, Saskia Homer, Andrew Gelman, Jan Sprenger, and Eric-Jan Wagenmakers)
- 2019 Abandon statistical significance. American Statistician 73 (S1), 235–245. (Blakeley B. Mc-Shane, David Gal, Andrew Gelman, Christian Robert, and Jennifer L. Tackett)
- 2019 Large scale replication projects in contemporary psychological research. American Statistician 73 (S1), 99–105. (Jennifer L. Tackett, Blakeley B. McShane, Ulf Bockenholt, and Andrew Gelman)
- 2019 Don't calculate post-hoc power using observed estimate of effect size. Annals of Surgery 269, e9–e10. (Andrew Gelman)
- 2019 Limitations of "Limitations of Bayesian leave-one-out cross-validation for model selection." Computational Brain and Behavior 2, 22–27. (Aki Vehtari, Daniel P. Simpson, Yuling Yao, and Andrew Gelman)
- 2019 Why high-order polynomials should not be used in regression discontinuity designs. *Journal* of Business and Economic Statistics **37**, 447–456. (Andrew Gelman and Guido Imbens)
- 2019 Visualization in Bayesian workflow (with discussion and rejoinder). Journal of the Royal Statistical Society A 182, 389–402. (Jonah Gabry, Daniel Simpson, Aki Vehtari, Michael Betancourt, and Andrew Gelman)
- 2018 R-squared for Bayesian regression models. American Statistician 73, 307–309. (Andrew Gelman, Ben Goodrich, Jonah Gabry, and Aki Vehtari)

- 2018 The statistical significance filter leads to overconfident expectations of replicability. *Journal of Memory and Language* **103**, 151–175. (Shravan Vasishth, Daniela Mertzen, Lena A. Jager, and Andrew Gelman)
- 2018 Do researchers anchor their beliefs on the outcome of an initial study? Testing the timereversal heuristic. Experimental Psychology 65, 158–169. (Anja Ernst, Rink Hoekstra, Eric-Jan Wagenmakers, Andrew Gelman, and Don van Ravenzwaaij)
- 2018 Ethics in statistical practice and communication: Five recommendations. Significance 15 (5), 40–43. (Andrew Gelman)
- 2018 Bayesian inference under cluster sampling with probability proportional to size. Statistics in Medicine 37, 3849–3868. (Susanna Makela, Yajuan Si, and Andrew Gelman)
- 2018 Yes, but did it work?: Evaluating variational inference. Proceedings of Machine Learning Research 80, 5581–5590. (Yuling Yao, Aki Vehtari, Daniel Simpson, and Andrew Gelman)
- 2018 Gaydar and the fallacy of decontextualized measurement. Sociological Science 5, 270–280. (Andrew Gelman, Greggor Mattson, and Daniel P. Simpson)
- 2018 Global shifts in the phenological synchrony of species interactions over recent decades. Proceedings of the National Academy of Sciences 115 (20), 5211–5216. (Heather M. Kharouba, Johan Ehrlen, Andrew Gelman, Kjell Bolmgren, Jenica M. Allen, Steve E. Travers, and Elizabeth M. Wolkovich)
- 2018 The Millennium Villages Project: A retrospective, observational, endline evaluation. Lancet Global Health 6 (5), e500–e513. (Shira Mitchell, Andrew Gelman, Rebecca Ross, Joyce Chen, Sehrish Bari, Uyen Kim Huynh, Matthew W. Harris, Sonia Ehrlich Sachs, Elizabeth A. Stuart, Avi Feller, Susanna Makela, Alan M. Zaslavsky, Lucy McClellan, Seth Ohemeng-Dapaah, Patricia Namakula, Cheryl A. Palm, and Jeffrey D. Sachs)
- 2018 Disentangling bias and variance in election polls. Journal of the American Statistical Association 113, 607–614. (Houshmand Shirani-Mehr, David Rothschild, Sharad Goel, and Andrew Gelman)
- 2018 Don't characterize replications as successes or failures. Discussion of "Making replication mainstream," by Rolf A. Zwaan et al. *Behavioral and Brain Sciences* **41**, e128. (Andrew Gelman)
- 2018 Using stacking to average Bayesian predictive distributions (with discussion and rejoinder). Bayesian Analysis 13, 917–1003. (Yuling Yao, Aki Vehtari, Daniel Simpson, and Andrew Gelman)
- 2018 Benefits and limitations of randomized controlled trials. Discussion of "Understanding and misunderstanding randomized controlled trials," by Angus Deaton and Nancy Cartwright. Social Science & Medicine 210, 48–49. (Andrew Gelman)
- 2018 The failure of null hypothesis significance testing when studying incremental changes, and what to do about it. *Personality and Social Psychology Bulletin* 44, 16–23. (Andrew Gelman)
- 2018 Bayesian aggregation of average data: An application in drug development. Annals of Applied Statistics 12, 1583–1604. (Sebastian Weber, Andrew Gelman, Daniel Lee, Michael Betancourt, Aki Vehtari, and Amy Racine-Poon)
- 2018 How to think scientifically about scientists' proposals for fixing science. Socius 4, 1–2. (Andrew Gelman)

- 2018 Learning from and responding to statistical criticism. *Observational Studies* 4, 32–33. (Andrew Gelman)
- 2018 Donald Rubin. In Encyclopedia of Social Research Methods, ed. Paul Atkinson, Sara Delamont, Melissa Hardy, and Malcolm Williams. Thousand Oaks, Calif.: Sage Publications. (Andrew Gelman)
- 2017 The prior can often only be understood in the context of the likelihood. *Entropy* **19**, 555. (Andrew Gelman, Daniel Simpson, and Michael Betancourt)
- 2017 Practical Bayesian model evaluation using leave-one-out cross-validation and WAIC. Statistics and Computing 27, 1413–1432. (Aki Vehtari, Andrew Gelman, and Jonah Gabry)
- 2017 19 things we learned from the 2016 election (with discussion and rejoinder). Statistics and Public Policy 4 (1), 1–10. (Andrew Gelman and Julia Azari)
- 2017 Exploring the relationships between USMLE performance and disciplinary action in practice: A validity study of score inferences from a licensure examination. Academic Medicine 92, 1780–1785. (Monica M. Cuddy, Aaron Young, Andrew Gelman, David B. Swanson, David A. Johnson, Gerard F. Dillon, and Brian E. Clauser)
- 2017 Some natural solutions to the p-value communication problem—and why they won't work. Journal of the American Statistical Association 112, 899–901. (Andrew Gelman and John Carlin)
- 2017 Beyond subjective and objective in statistics (with discussion and rejoinder). Journal of the Royal Statistical Society A 180, 967–1033. (Andrew Gelman and Christian Hennig)
- 2017 Measurement error and the replication crisis. *Science* **355**, 584–585. (Eric Loken and Andrew Gelman)
- 2017 Honesty and transparency are not enough. Chance 30 (1), 37–39. (Andrew Gelman)
- 2017 Stan: A probabilistic programming language. Journal of Statistical Software 76 (1). (Bob Carpenter, Andrew Gelman, Matt Hoffman, Daniel Lee, Ben Goodrich, Michael Betancourt, Marcus Brubaker, Jiqiang Guo, Peter Li, and Allen Riddell)
- 2017 Consensus Monte Carlo using expectation propagation. Brazilian Journal of Probability and Statistics 31, 692–696. (Andrew Gelman and Aki Vehtari)
- 2017 The 2008 election: A preregistered replication analysis. Statistics and Public Policy 4 (1), 1–8. (Rayleigh Lei, Andrew Gelman, and Yair Ghitza)
- 2017 The statistical crisis in science: How is it relevant to clinical neuropsychology? *Clinical Neuropsychologist* **31**, 1000–1014. (Andrew Gelman and Hilde Geurts)
- 2017 Automatic differentiation variational inference. Journal of Machine Learning Research 18, 1–45. (Alp Kucukelbir, Dustin Tran, Rajesh Ranganath, Andrew Gelman, and David M. Blei)
- 2017 Learning about networks using sampling. Journal of Survey Statistics and Methodology 5, 22–28. (Andrew Gelman)
- 2017 Fitting Bayesian item response models in Stata and Stan. *Stata Journal* **17**, 343–357. (Robert Grant, Daniel Furr, Bob Carpenter, and Andrew Gelman)
- 2016 Questionable association between front boarding and air rage. Proceedings of the National Academy of Sciences 113, E7348. (Marcus Crede, Andrew Gelman, and Carol Nickerson)

- 2016 Age-aggregation bias in mortality trends. Proceedings of the National Academy of Sciences 113, E816–E817. (Andrew Gelman and Jonathan Auerbach)
- 2016 A Bayesian bird's eye view of 'Replications of important results in social pscyhology.' Royal Society Open Science 4: 160426. (Maarten Marsman, Felix Schoonbrodt, Richard Morey, Yuling Yao, Andrew Gelman, and Eric-Jan Wagenmakers)
- 2016 Commentary on "Crisis in science? Or Crisis in statistics! Mixed messages in statistics with impact on science," by Donald A. S. Fraser and Nancy M. Reid. *Journal of Statistical Research* 48–50, 11–12. (Andrew Gelman)
- 2016 High-frequency polling with non-representative data. In Political Communication in Real Time: Theoretical and Applied Research Approaches, 89–105. (Andrew Gelman, Sharad Goel, David Rothschild, and Wei Wang)
- 2016 Increasing transparency through a multiverse analysis. Perspectives on Psychological Science 11, 702–712. (Sara Steegen, Francis Tuerlinckx, Andrew Gelman, and Wolf Vanpaemel)
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- 1994 Discussion of "Approximate Bayesian inference and the weighted likelihood bootstrap," by M. A. Newton and A. E. Raftery. *Journal of the Royal Statistical Society B* 56, 37. (Andrew Gelman)
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- 1993 Review of Forecasting Elections, by M. S. Lewis-Beck and T. W. Rice. Public Opinion Quarterly 57, 119–121. (Andrew Gelman)
- 1993 Discussion of "Bayesian computation via the Gibbs sampler and related Markov chain methods," by A. F. M. Smith and G. O. Roberts. *Journal of the Royal Statistical Society B* 55, 73. (Andrew Gelman and Donald B. Rubin)
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- 1990 Estimating incumbency advantage without bias. American Journal of Political Science 34, 1142–1164. (Andrew Gelman and Gary King)
- 1990 Estimating the electoral consequences of legislative redistricting. Journal of the American Statistical Association 85, 274–282. (Andrew Gelman and Gary King)
- 1990 Discussion of "A smoothed EM approach to indirect estimation problems, with particular reference to stereology and emission tomography," by B. W. Silverman et al. *Journal of the Royal Statistical Society B* **52**, 314–315. (Andrew Gelman)
- 1989 Electoral responsiveness in U.S. Congressional elections, 1946–1986 (abstract). Proceedings of the Social Statistics Section, American Statistical Association, 208. (Andrew Gelman and Gary King)
- 1989 Constrained maximum entropy methods in an image reconstruction problem. In Maximum Entropy and Bayesian Methods, ed. J. Skilling, 429–435. Kluwer Academic Publishers. (Andrew Gelman)
- 1987 Subboundary-free zone-melt recrystallization of thin-film silicon. Applied Physics Letters 51, 1256–1258. (Loren Pfeiffer, Andrew Gelman, K. A. Jackson, K. W. West, and J. L. Batstone)
- 1987 Growth mechanisms during thin film crystallization from the melt. Materials Research Society Symposium Proceedings 74, 543–553. (Loren Pfeiffer, Andrew Gelman, K. A. Jackson, and K. W. West)
- 1986 Reduced subboundary misalignment in SOI films scanned at low velocities. Materials Research Society Symposium Proceedings 53, 29–37. (Loren Pfeiffer, K. W. West, D. C. Joy, J. M. Gibson, and A. Gelman)
- 1984 The effects of solar flares on single event upset rates. *IEEE Transactions on Nuclear Science* and Radiation Effects **NS-31**, 1212–1216. (James H. Adams, Jr., and Andrew Gelman)

Public software

- 2012–2022 Stan: A C++ and R/Python package for Bayesian sampling. (Andrew Gelman, Bob Carpenter, Matt Hoffman, Daniel Lee, Ben Goodrich, Michael Betancourt, and others)
- 2008–2016 mi: An R package for missing data imputation. (Andrew Gelman, Jennifer Hill, Ben Goodrich, Jon Kropko, Masanao Yajima, and Yu-Sung Su)
- 2007–2016 arm: An R package for applied regression and multilevel modeling. (Andrew Gelman, Jennifer Hill, Maria Grazia Pittau, and Yu-Sung Su)
- 2002–2005 R2WinBUGS: Functions for running Bugs from R. (Andrew Gelman, Sibylle Sturtz, and Uwe Ligges)
- 1992–2008 Judgeit: A program for evaluating electoral systems and redistricting plans. (Andrew Gelman, Gary King, and Andrew Thomas)
- 1991–1995 itsim: Functions for inference for iterative simulation. (Andrew Gelman, Donald Rubin, and Stephen Brooks)

Courses taught

Sample Surveys Decision Analysis Statistical Consulting Statistical Modeling and Data Analysis I, II Bayesian Data Analysis Quantitative Methods in Social Sciences Multilevel Modeling Teaching Statistics at the University Level Applied Regression and Multilevel Modeling Applied Regression and Causal Inference Research in Quantitative Political Science Statistical Computing Statistical Computing Statistical Communication and Graphics Communicating Data and Statistics

Introduction to Probability and Statistics

Service

Served on editorial board of the following journals: American Sociological Review, Annals of Applied Statistics, Biometrika, Chance, Journal of the American Statistical Association, Journal of Educational and Behavioral Statistics, Journal of Statistical Planning and Inference, Judgment and Decision Making, Medical Decision Making, Political Analysis, Sociological Methodology, and Statistica Sinica.

Refereed articles in probability and statistics for Advances and Applications in Statistics, American Mathematical Monthly, Annals of Applied Probability, Annals of the Institute of Statistical Mathematics, Annals of Statistics, Artificial Intelligence Journal, Australian Journal of Statistics, Automatica, Biometrical Journal, Biometrics, Biometrika, BMC Medical Research Methodology, Canadian Journal of Statistics, Journal of the American Statistical Association (Applications, Theory & Methods, and General sections), Communications in Statistics, Computational Statistics and Data Analysis, IEEE International Symposium on Information Theory, IEEE Transactions, IEEE Transactions on Pattern Analysis and Machine Intelligence, International Statistical Review, Journal of Business and Economic Statistics, Journal of Computational and Graphical Statistics, Journal of Educational and Behavioral Statistics, Journal of the Royal Statistical Society (Series A and B), Journal of Statistical Planning and Inference, Journal of Zhejiang University Science, Lifetime Data Analysis, Measurement Science and Technology, Metron, Pakistan Journal of Statistics, Probability in the Engineering and Information Sciences, Psychometrika, R News, Sankhya, Scandinavian Journal of Statistics, SIAM Journal on Applied Mathematics, Sociological Methodology, Sociological Methods and Research, Statistica Sinica, Statistical Modelling, Statistical Papers, Statistical Science, Statistics and Computing, Statistics and Probability Letters, Statistics in Medicine, Stochastics, Technometrics, Test, and many other journals.

Refereed articles in applied fields for the American Economic Review, American Journal of Political Science, American Journal of Public Health, American Political Science Review, Annals of Emergency Medicine, Applied Economics Research Bulletin, BMC Medical Informatics and Decision Making, BMC Medical Research Methodology, British Journal of Mathematical and Statistical Psychology, British Journal of Political Science, Chest, Clinical Infectious Diseases, Comparative Political Science, Developmental Psychology, Ecology, Ecological Applications, Economic Theory, Educational Evaluation and Policy Analysis, Electoral Studies, Environmental Modelling and Software, Epidemiology, European Journal of Political Economy, Geographical Analysis, Geographical and Environmental Modelling, IEEE Transactions on Medical Imaging, International Journal of Forecasting, International Journal of Psychiatry in Medicine, Journal of Clinical Epidemiology, Journal of Clinical Investigation, Journal of Consulting and Clinical Psychology, Journal of Economic Behavior and Organization, Journal of Human Development, Journal of Pharmacokinetics and Pharmacodynamics, Journal of Political Economy, Journal of Politics, Journal of Population Research, Journal of Stochastic Environmental Research and Risk Assessment, Journal of Theoretical Biology, Journal of Theoretical Politics, Legislative Studies Quarterly, Management Science, Marine and Freshwater Research, Mathematical Psychology, Nature, Organizational Research Methods, Party Politics, Pharmaceutical Statistics, Physical Review, Political Analysis, Political Behavior, Political Research Quarterly, Proceedings of the National Academy of Sciences, Psychological Methods, Public Opinion Quarterly, Quarterly Journal of Political Science, Rationality and Society, Risk Analysis, Science, Social Problems, Social Science Quarterly, State Politics and Policy Quarterly, Theory and Decision, Trials, World Politics, and Zeitschrift fur Psychologie, and many other journals.

Reviewed research proposals or served on review panels for the Australian Research Council, Canada Foundation for Innovation, European Research Council, Hong Kong Research Council, Israel Science Foundation, Natural Sciences and Engineering Research Council of Canada, U.K. Economic and Social Research Council, U.S. Environmental Protection Agency, U.S. Geological Survey, U.S. Department of Energy, U.S. Institute of Education Sciences, U.S. National Institutes of Health, U.S. National Research Council, U.S. National Security Agency, U.S. National Science Foundation, and Wellcome Trust.

Served on advisory panel for New York City Social Indicators Survey, School of Social Work, Columbia University.

Served on advisory panel for Columbia University Superfund Basic Research Program, Health Effects and Geochemistry of Arsenic and Lead.

Served on National Academy of Sciences Panel on Improving Data to Analyze Food and Nutrition Policies.

Senior Advisor for Columbia University Center on Integrative Developmental Science.

Served on advisory panel for the General Social Survey.

Research blog, Statistical Modeling, Causal Inference, and Social Science, since 2004,

https://statmodeling.stat.columbia.edu

Contribute to Monkey Cage political science blog at the Washington Post

Communicate statistics to the public via general-interest articles in the New York Times, Slate, Vox, the New Yorker, Wired, and other publications.

Consulting

Areas of expertise include: sampling (design and analysis); Bayesian statatistics; regression and multilevel modeling; statistical computing; public opinion, voting, and American politics; environmental statistics; statistical communication and graphics.

Business consulting:

1998–1999 U.S. Postal Service (design and analysis of sample surveys)

- 2009 Intertek Sustainability Solutions (design of a supplier auditing system)
- 2009 Australia Online Research (survey weighting)
- 2013 Pfizer (discussion of trends and statistical methods related to public opinion and health reform)
- 2010–2017 Novartis (statistical modeling, computing, and data analysis)
- 2014–2016 National Board of Medical Examiners (statistical modeling, computing, and data analysis)
- 2018–2019 Cibo Technologies (scientific advisory board)

2020 Unlearn.ai (scientific advisory board)

- 2020–present Amazon.com (Amazon scholar)
- 2021-present Mondai Health (statistical modeling)
- 2021–present JP Morgan Chase (statistical modeling)

Legal consulting:

- 2004–2005 Kornstein Veisz Wexler & Pollard, LLP, representing Employers Insurance Company of Wausau in Willis of New York, Inc. v. Employers Insurance Company of Wausau (analysis of survey data, criticism of analyses). Submitted an expert report. Case was settled before trial.
 - 2006 Latham & Watkins, representing the American Civil Liberties Union in ACLU et al. v. Attorney General Alberto R. Gonzales (assessment of quality of surveys). Submitted an expert report. Was deposed as an expert. Case was settled before trial.
- 2010–2012 Cadwalader, Wickersham & Taft LLP, representing MBIA Insurance Corporation in MBIA Insurance Corporation v. Residential Funding Company, LLC (design and analysis of surveys). Submitted an expert report. Case was settled before trial.
- 2014–2015 Latham & Watkins, representing Health Corporation of America, in Health Care Foundation of Greater Kansas City v. HM Acquisition, LLC and HCA, Inc. (analysis of survey data, missing-data imputation, statistical graphics). Case was settled before trial.

2020 Wilshire Law Firm.

Other consulting:

Reviewed reports, performed analyses, or gave statistical advice to Alcoholics Anonymous, Associated Press, Con Edison, Council on Accreditation for Children and Family Services, Environmental Protection Agency, RAND, Museum of Modern Art, National League for Nursing, New York City Department of Health, New York State Attorney General's Office, Pandora, Random House, Transparency International, Voter News Service, and other organizations.