



Steven Goodman

Professor of Epidemiology and Population Health and of Medicine (Primary Care and Population Health)

CONTACT INFORMATION

- **Administrative contact**

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Bio

BIO

Steven Goodman, MD, MHS, PhD is Associate Dean of Clinical and Translational Research and Professor of Epidemiology and Population Health, and Medicine. He is co-founder and co-director of the Meta-research innovation Center at Stanford (METRICS), a group dedicated to examining and improving the reproducibility and efficiency of biomedical research. He has since created and leads another initiative, the Stanford Program on Research Rigor and Reproducibility (SPORR), whose purpose is to teach and implement best practices in reproducible research in the School of Medicine. He led the Stanford CTSA KL2 and TL1 training programs from 2012-2019, and now leads the Translational Workforce Development components of the CTSA.

Dr. Goodman's own research concerns the proper measurement, conceptualization and synthesis of research evidence, with particular emphasis on Bayesian approaches to quantitation, and qualitative approaches arising from the philosophy of science. He is also interested in developing methods to use shared data to confirm and extend published science. He also has worked on the connections between ethics and clinical research and policy making. Finally, he has a strong interest in developing curricula and new models for teaching the foundations of good scientific practice, from question development to proper study design, conduct, analysis and inference. He teaches courses on clinical research methods, foundations of scientific and statistical reasoning, and evaluation of diagnostic and predictive technologies.

He has been a senior statistical editor of *Annals of Internal Medicine* since 1987 and was Editor of *Clinical Trials: Journal of the Society for Clinical Trials* from 2004-2013. He is Chair of the Methodology Committee of the Patient Centered Outcomes Research Institute (PCORI), where he led their open science and data sharing efforts, and is scientific advisor for the national Blue Cross–Blue Shield Technology Assessment Program. He has served on numerous Institute of Medicine committees since the mid 1990's, including one on vaccine safety, chairing a 2012 committee on drug safety, and a 2014 committee on sharing data from clinical trials. He was awarded the 2016 Spinoza Chair in Medicine from the University of Amsterdam for his work in scientific inference, received the 2019 Abraham Lilienfeld award from the American College of Epidemiology for his lifetime research and teaching contributions to the field, and was elected into the National Academy of Medicine in 2020.

From 1989-2011, Steve served on the faculties of the Johns Hopkins Schools of Medicine and Public Health, where he was co-director of the doctoral program in Epidemiology and member (1989-2011) and then director (2007-2011) of the Johns Hopkins cancer center's Division of Biostatistics and Bioinformatics. At

Hopkins, he taught courses on Systematic reviews and Meta-analysis, Diagnostic and prognostic testing, and several courses on epidemiologic, clinical research and inferential methods. He received an AB from Harvard, majoring in Biochemistry and Applied Math, an MD from NYU, trained and was board-certified in pediatrics at Washington University in St. Louis, and received a master's degree in Biostatistics and PhD in Epidemiology from Johns Hopkins.

ACADEMIC APPOINTMENTS

- Professor, Epidemiology and Population Health
- Professor, Medicine - Primary Care and Population Health
- Member, Stanford Cancer Institute

ADMINISTRATIVE APPOINTMENTS

- Associate Dean of Clinical and Translational Research, Stanford School of Medicine, (2011- present)
- Director, Stanford Program on Research Rigor and Reproducibility (SPORR), (2020- present)
- Co-Director, Meta-research Innovation Center at Stanford (METRICS), (2013- present)
- Director of Graduate Studies, Dept. of Epidemiology and Population Health, (2019- present)
- Co-Director, MedScholars Clinical Research Concentration, Stanford School of Medicine, (2011- present)
- Director, Spectrum Research Education and Training, Stanford School of Medicine, (2011-2019)
- Chief, Division of Epidemiology, Dept. of Health Research and Policy, (2014-2019)
- Director, Division of Biostatistics and Bioinformatics, Department of Oncology, Johns Hopkins School of Medicine, (2007-2010)
- Professor of Oncology, Pediatrics, Biostatistics and Epidemiology, Johns Hopkins Schools of Medicine and Public Health, (1989-2011)

HONORS AND AWARDS

- Member, National Public Health Honor Society (1989)
- Myrto Lefkopoulou Distinguished Lecturer, Harvard Dept of Biostatistics (2000)
- Fellow, Society for Clinical Trials (2010)
- Spinoza Chair in Medicine, University of Amsterdam (2016)
- Abraham Lilienfeld Award, American College of Epidemiology (2019)
- Lifetime Fellow, American College of Epidemiology (2019)
- Elected Member, National Academy of Medicine (2020)

BOARDS, ADVISORY COMMITTEES, PROFESSIONAL ORGANIZATIONS

- Chair, Methodology Committee, PCORI (2019 - present)
- Vice-chair, Methodology Committee, Patient Centered Outcomes Research Institute (PCORI) (2011 - 2019)
- Senior statistical editor, Annals of Internal Medicine (1987 - present)
- Scientific Advisor and member, Medical Advisory Panel, National Blue Cross-Blue Shield Technology Assessment Program (2001 - present)
- Member, Advisory committee to the NIH director on the National Library of Medicine (2015 - 2015)
- Member, Committee on Responsible Sharing of Clinical Trial Data, Institute of Medicine (2013 - 2015)
- Co-chair, Committee on Drug Safety, Institute of Medicine (2010 - 2012)
- Editor in Chief, Clinical Trials: Journal of the Society for Clinical Trials (2004 - 2013)
- Member, Committee on Immunization Safety, Institute of Medicine (2001 - 2004)

PROFESSIONAL EDUCATION

- PhD, Johns Hopkins School of Public Health , Epidemiology (1989)

- MHS, Johns Hopkins School of Public Health , Biostatistics (1987)
- Board Certification, General Pediatrics, American Board of Pediatrics , Pediatrics (1985)
- Residency, St. Louis Children's Hospital, Washington University School of Medicine , Pediatrics (1984)
- MD, New York University , Medicine (1981)
- AB, Harvard College , Biochemistry, Applied Math (1976)

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I am interested in issues relating to the representation and measurement of evidence in medical research, and determinants of the truth of medical findings, using a Bayesian framework. I also do work in evidence synthesis, comparative effectiveness research, and the ethics of clinical research.

Teaching

COURSES

2021-22

- Epidemiology Research Seminar: EPI 236 (Aut)
- Essentials of Clinical Research at Stanford: EPI 273 (Win)
- Evaluating Technologies for Diagnosis, Prediction and Screening: EPI 219 (Win)
- Foundations of Statistical and Scientific Inference: EPI 264, STATS 264 (Aut)
- Foundations of statistics and reproducible research: BIOS 217 (Aut)
- Intensive Course in Clinical Research: EPI 245 (Aut)
- Stanford CTSA Scholars Seminar: EPI 229 (Aut, Win, Spr)

2020-21

- Cinematic Discoveries: A movie-based exploration of research rigor, communication and diversity: BIOS 298 (Aut)
- Epidemiology Research Seminar: EPI 236 (Aut)
- Essentials of Clinical Research at Stanford: EPI 273 (Win)
- Evaluating Technologies for Diagnosis, Prediction and Screening: EPI 219 (Win)
- Foundations of Statistical and Scientific Inference: EPI 264, STATS 264 (Aut)
- Foundations of statistics and reproducible research: BIOS 217 (Aut)
- Intensive Course in Clinical Research: EPI 245 (Aut)
- Stanford CTSA Scholars Seminar: EPI 229 (Aut, Win, Spr, Sum)
- The Practice of Reproducible Research: BIOS 216 (Sum)

2019-20

- Epidemiology Research Seminar: HRP 236 (Aut)
- Essentials of Clinical Research at Stanford: HRP 273 (Win)
- Evaluating Technologies for Diagnosis, Prediction and Screening: HRP 219 (Win)
- Foundations of Statistical and Scientific Inference: HRP 264, STATS 264 (Aut)
- Intensive Course in Clinical Research: HRP 245 (Aut)
- Spectrum Scholars Seminar: HRP 229 (Win, Spr, Sum)

2018-19

- Epidemiology Research Seminar: HRP 236 (Aut)
- Essentials of Clinical Research at Stanford: HRP 273 (Aut, Win)
- Foundations of Statistical and Scientific Inference: HRP 264 (Aut)
- Intensive Course in Clinical Research: HRP 245 (Aut)
- Spectrum Scholars Seminar: HRP 229 (Aut, Win, Spr, Sum)

STANFORD ADVISEES

Doctoral Dissertation Reader (AC)

Matthew Sigurdson

Postdoctoral Faculty Sponsor

Mario Malicki

Master's Program Advisor

Ana Pacheco-Navarro

GRADUATE AND FELLOWSHIP PROGRAM AFFILIATIONS

- Epidemiology (Phd Program)
- Epidemiology (Masters Program)

Publications

PUBLICATIONS

- **How large should the next study be? Predictive power and sample size requirements for replication studies.** *Statistics in medicine*
van Zwet, E. W., Goodman, S. N.
2022
- **Assessment of the Frequency and Variety of Persistent Symptoms Among Patients With COVID-19: A Systematic Review.** *JAMA network open*
Nasserie, T., Hittle, M., Goodman, S. N.
2021; 4 (5): e2111417
- **Mortality outcomes with hydroxychloroquine and chloroquine in COVID-19 from an international collaborative meta-analysis of randomized trials.** *Nature communications*
Axfors, C., Schmitt, A. M., Janiaud, P., Van't Hooft, J., Abd-Elsalam, S., Abdo, E. F., Abella, B. S., Akram, J., Amaravadi, R. K., Angus, D. C., Arabi, Y. M., Azhar, S., Baden, et al
2021; 12 (1): 2349
- **U.S. Food and Drug Administration Reasoning in Approval Decisions When Efficacy Evidence Is Borderline, 2013-2018.** *Annals of internal medicine*
Janiaud, P., Irony, T., Russek-Cohen, E., Goodman, S. N.
2021
- **The Role of Masks in Mitigating the SARS-CoV-2 Pandemic: Another Piece of the Puzzle.** *Annals of internal medicine*
Laine, C., Goodman, S. N., Guallar, E.
2020
- **COVID-19 Clinical Trials: A Teachable Moment for Improving Our Research Infrastructure and Relevance.** *Annals of internal medicine*
Kimmel, S. E., Califf, R. M., Dean, N. E., Goodman, S. N., Ogburn, E. L.
2020
- **Harms From Uninformative Clinical Trials.** *JAMA*
Zarin, D. A., Goodman, S. N., Kimmelman, J.
2019

- **The high resource impact of reformatting requirements for scientific papers.** *PloS one*
Jiang, Y. n., Lerrigo, R. n., Ullah, A. n., Alagappan, M. n., Asch, S. M., Goodman, S. N., Sinha, S. R.
2019; 14 (10): e0223976
- **Inappropriate Statistical Analysis and Reporting in Medical Research: Perverse Incentives and Institutional Solutions.** *Annals of internal medicine*
Localio, A. R., Stack, C. B., Meibohm, A. R., Ross, E. A., Guallar, E., Wong, J. B., Cornell, J. E., Griswold, M. E., Goodman, S. N.
2018
- **Assessing scientists for hiring, promotion, and tenure** *PLOS BIOLOGY*
Moher, D., Naudet, F., Cristea, I. A., Miedema, F., Ioannidis, J. A., Goodman, S. N.
2018; 16 (3): e2004089
- **What does research reproducibility mean?** *SCIENCE TRANSLATIONAL MEDICINE*
Goodman, S. N., Fanelli, D., Ioannidis, J. P.
2016; 8 (341)
- **The Research-Treatment Distinction: A Problematic Approach for Determining Which Activities Should Have Ethical Oversight** *HASTINGS CENTER REPORT*
Kass, N. E., Faden, R. R., Goodman, S. N., Pronovost, P., Tunis, S., Beauchamp, T. L.
2013; 43: S4-S15
- **An Ethics Framework for a Learning Health Care System: A Departure from Traditional Research Ethics and Clinical Ethics** *HASTINGS CENTER REPORT*
Faden, R. R., Kass, N. E., Goodman, S. N., Pronovost, P., Tunis, S., Beauchamp, T. L.
2013; 43: S16-S27
- **Causal inference in public health.** *Annual review of public health*
Glass, T. A., Goodman, S. N., Hernán, M. A., Samet, J. M.
2013; 34: 61-75
- **Ethical Considerations in Studying Drug Safety - The Institute of Medicine Report** *NEW ENGLAND JOURNAL OF MEDICINE*
Mello, M. M., Goodman, S. N., Faden, R. R.
2012; 367 (10): 959-964
- **Quasi-random reflections on randomized controlled trials and comparative effectiveness research** *CLINICAL TRIALS*
Goodman, S. N.
2012; 9 (1): 22-26
- **The Methods of Comparative Effectiveness Research** *ANNUAL REVIEW OF PUBLIC HEALTH, VOL 33*
Sox, H. C., Goodman, S. N.
2012; 33: 425-445
- **Metabias: A Challenge for Comparative Effectiveness Research** *ANNALS OF INTERNAL MEDICINE*
Goodman, S., Dickersin, K.
2011; 155 (1): 61-U104
- **Confessions of a chagrined trialist** *BMJ QUALITY & SAFETY*
Goodman, S.
2011; 20: I97-I98
- **Rethinking Randomized Clinical Trials for Comparative Effectiveness Research: The Need for Transformational Change** *ANNALS OF INTERNAL MEDICINE*
Luce, B. R., Kramer, J. M., Goodman, S. N., Connor, J. T., Tunis, S., Whicher, D., Schwartz, J. S.
2009; 151 (3): 206-W45
- **A dirty dozen: Twelve P-value misconceptions** *SEMINARS IN HEMATOLOGY*
Goodman, S.
2008; 45 (3): 135-140
- **Stopping at nothing? Some dilemmas of data monitoring in clinical trials** *ANNALS OF INTERNAL MEDICINE*

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- Goodman, S. N.
2007; 146 (12): 882-887
- **Reproducible research: Moving toward research the public can really trust** *ANNALS OF INTERNAL MEDICINE*
Laine, C., Goodman, S. N., Griswold, M. E., Sox, H. C.
2007; 146 (6): 450-453
 - **Assessing the unreliability of the medical literature: A response to ?Why most published research findings are false?** *www.bepress.com/jhubiostat/paper135*
Goodman SN, Greenland S
2007
 - **Introduction to Bayesian methods I: measuring the strength of evidence** *CLINICAL TRIALS*
Goodman, S. N.
2005; 2 (4): 282-290
 - **A Bayesian approach to randomized controlled trials in children utilizing information from adults: the case of Guillain-Barre syndrome** *CLINICAL TRIALS*
Goodman, S. N., Sladky, J. T.
2005; 2 (4): 305-310
 - **Of P-values and bayes: A modest proposal** *EPIDEMIOLOGY*
Goodman, S. N.
2001; 12 (3): 295-297
 - **Toward evidence-based medical statistics. 2: The Bayes factor** *ANNALS OF INTERNAL MEDICINE*
Goodman, S. N.
1999; 130 (12): 1005-1013
 - **Toward evidence-based medical statistics. 1: The P value fallacy** *ANNALS OF INTERNAL MEDICINE*
Goodman, S. N.
1999; 130 (12): 995-1004
 - **SOME PRACTICAL IMPROVEMENTS IN THE CONTINUAL REASSESSMENT METHOD FOR PHASE-I STUDIES** *STATISTICS IN MEDICINE*
Goodman, S. N., Zahurak, M. L., PIANTADOSI, S.
1995; 14 (11): 1149-1161
 - **ASSOCIATION BETWEEN CIGARETTE-SMOKING AND MUTATION OF THE P53 GENE IN SQUAMOUS-CELL CARCINOMA OF THE HEAD AND NECK** *NEW ENGLAND JOURNAL OF MEDICINE*
Brennan, J. A., Boyle, J. O., Koch, W. M., Goodman, S. N., Hruban, R. H., EBY, Y. J., COUCH, M. J., Forastiere, A. A., Sidransky, D.
1995; 332 (11): 712-717
 - **THE USE OF PREDICTED CONFIDENCE-INTERVALS WHEN PLANNING EXPERIMENTS AND THE MISUSE OF POWER WHEN INTERPRETING RESULTS** *ANNALS OF INTERNAL MEDICINE*
Goodman, S. N., Berlin, J. A.
1994; 121 (3): 200-206
 - **P-VALUES, HYPOTHESIS TESTS, AND LIKELIHOOD - IMPLICATIONS FOR EPIDEMIOLOGY OF A NEGLECTED HISTORICAL DEBATE** *AMERICAN JOURNAL OF EPIDEMIOLOGY*
Goodman, S. N.
1993; 137 (5): 485-496
 - **A COMMENT ON REPLICATION, P-VALUES AND EVIDENCE** *STATISTICS IN MEDICINE*
Goodman, S. N.
1992; 11 (7): 875-879
 - **META-ANALYSIS AND EVIDENCE** *CONTROLLED CLINICAL TRIALS*
Goodman, S. N.
1989; 10 (2): 188-204
 - **EVIDENCE AND SCIENTIFIC-RESEARCH** *AMERICAN JOURNAL OF PUBLIC HEALTH*
Goodman, S. N., Royall, R.

1988; 78 (12): 1568-1574

- **Early Discontinuation, Results Reporting, and Publication of Pediatric Clinical Trials.** *Pediatrics*
Brewster, R., Wong, M., Magnani, C. J., Gunningham, H., Hoffer, M., Showalter, S., Tran, K., Steinberg, J. R., Turner, B. E., Goodman, S. N., Schroeder, A. R.
2022
- **Association between convalescent plasma treatment and mortality in COVID-19: a collaborative systematic review and meta-analysis of randomized clinical trials.** *BMC infectious diseases*
Axfors, C., Janiaud, P., Schmitt, A. M., Van't Hooft, J., Smith, E. R., Haber, N. A., Abayomi, A., Abduljalil, M., Abdulrahman, A., Acosta-Ampudia, Y., Aguilar-Guisado, M., Al-Beidh, F., Alejandria, et al
2021; 21 (1): 1170
- **The Effects of Intermittent Fasting on Gastroesophageal Reflux Disease**
Jiang, Y., Goodman, S., Sonu, I., Garcia, P., Fernandez-Becker, N., Kamal, A., Zikos, T., Singh, S., Neshatian, L., Triadafilopoulos, G., Clarke, J.
LIPPINCOTT WILLIAMS & WILKINS.2021: S214
- **Author Correction: Mortality outcomes with hydroxychloroquine and chloroquine in COVID-19 from an international collaborative meta-analysis of randomized trials.** *Nature communications*
Axfors, C., Schmitt, A. M., Janiaud, P., Van't Hooft, J., Abd-Elsalam, S., Abdo, E. F., Abella, B. S., Akram, J., Amaravadi, R. K., Angus, D. C., Arabi, Y. M., Azhar, S., Baden, et al
2021; 12 (1): 3001
- **Association of Convalescent Plasma Treatment With Clinical Outcomes in Patients With COVID-19: A Systematic Review and Meta-analysis.** *JAMA*
Janiaud, P., Axfors, C., Schmitt, A. M., Gloy, V., Ebrahimi, F., Heprich, M., Smith, E. R., Haber, N. A., Khanna, N., Moher, D., Goodman, S. N., Ioannidis, J. P., Hemkens, et al
2021
- **Randomized COVID-19 vaccination rollout can offer direct real-world evidence: Randomized COVID-19 vaccination rollout.** *Journal of clinical epidemiology*
Hemkens, L. G., Goodman, S. N.
2021
- **Association of Rapid Eye Movement Sleep With Mortality in Middle-aged and Older Adults.** *JAMA neurology*
Leary, E. B., Watson, K. T., Ancoli-Israel, S., Redline, S., Yaffe, K., Ravelo, L. A., Peppard, P. E., Zou, J., Goodman, S. N., Mignot, E., Stone, K. L.
2020
- **THE ASSOCIATION BETWEEN REM SLEEP AND RISK OF MORTALITY IN THREE INDEPENDENT COHORTS**
Leary, E. B., Watson, K. T., Ancoli-Israel, S., Redline, S., Yaffe, K., Ravelo, L. A., Peppard, P. E., Zou, J., Goodman, S., Mignot, E., Stone, K. L.
OXFORD UNIV PRESS INC.2020: A19-A20
- **The Predictive Approaches to Treatment effect Heterogeneity (PATH) Statement: Explanation and Elaboration** *ANNALS OF INTERNAL MEDICINE*
Kent, D. M., van Klaveren, D., Paulus, J. K., D'Agostino, R., Goodman, S., Hayward, R., Ioannidis, J. A., Patrick-Lake, B., Morton, S., Pencina, M., Raman, G., Ross, J. S., Selker, et al
2020; 172 (1): W1-W25
- **How often do leading biomedical journals use statistical experts to evaluate statistical methods? The results of a survey.** *PloS one*
Hardwicke, T. E., Goodman, S. N.
2020; 15 (10): e0239598
- **Single-cell mass cytometry reveals cross-talk between inflammation-dampening and inflammation-amplifying cells in osteoarthritic cartilage** *Science Advances*
Grandi, F., Baskar, R., Smeriglio, P., Murkherjee, S., Indelli, P., F. Amanatullah, D., Goodman, S., Chu, C., Bendall, S., Bhutani, N.
2020; 6 (11)
- **The worldwide clinical trial research response to the COVID-19 pandemic - the first 100 days.** *F1000Research*
Janiaud, P., Axfors, C., Van't Hooft, J., Saccilotto, R., Agarwal, A., Appenzeller-Herzog, C., Contopoulos-Ioannidis, D. G., Danchev, V., Dirnagl, U., Ewald, H., Gartlehner, G., Goodman, S. N., Haber, et al
2020; 9: 1193
- **Preprint Servers' Policies, Submission Requirements, and Transparency in Reporting and Research Integrity Recommendations.** *JAMA*
Malicki, M., Jeroncic, A., Ter Riet, G., Bouter, L. M., Ioannidis, J. P., Goodman, S. N., Aalbersberg, I. J.

2020; 324 (18): 1901–3

- **Calibrating the Scientific Ecosystem Through Meta-Research** *Annual Review of Statistics and Its Application*
Tom, H. E., Stylianos, S., Janiaud, P., Danchev, V., Crüwell, S., Goodman, S. N., Ioannidis, J. P.
2020; 7
- **THE ASSOCIATION BETWEEN REM SLEEP AND MORTALITY IN THE MROS AND WISCONSIN SLEEP COHORTS**
Leary, E. B., Watson, K. T., Ancoli-Israel, S., Redline, S., Yaffe, K., Ravelo, L. A., Peppard, P. E., Zou, J., Goodman, S. N., Mignot, E., Stone, K. L.
ELSEVIER.2019: S213
- **Lost Evidence From Registered Large Long-Unpublished Randomized Controlled Trials: A Survey** *ANNALS OF INTERNAL MEDICINE*
Tatsioni, A., Karassa, F. B., Goodman, S. N., Zarin, D. A., Fanelli, D., Ioannidis, J. A.
2019; 171 (4): 300+
- **Random-Effects Assumption in Meta-analyses-Reply.** *JAMA*
Goodman, S. N., Serghiou, S.
2019; 322 (1): 82
- **Urodynamic factors associated with the large capacity bladder and incomplete emptying after prolapse repair (2009-2015)** *NEUROUROLOGY AND URODYNAMICS*
Dobberfuhr, A. D., Shaffer, R. K., Goodman, S. N., Chen, B. H.
2019; 38 (5): 1322–31
- **Lack of Diagnostic Utility of "Amino Acid Dysregulation Metabotypes"** *BIOLOGICAL PSYCHIATRY*
Sainani, K. L., Goodman, S. N.
2019; 85 (7): E41-E42
- **Urodynamic factors associated with the large capacity bladder and incomplete emptying after prolapse repair (2009-2015).** *Neurourology and urodynamics*
Dobberfuhr, A. D., Shaffer, R. K., Goodman, S. N., Chen, B. H.
2019
- **Random-Effects Meta-analysis Summarizing Evidence With Caveats** *JAMA-JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION*
Serghiou, S., Goodman, S. N.
2019; 321 (3): 301-302
- **The Predictive Approaches to Treatment effect Heterogeneity (PATH) Statement.** *Annals of internal medicine*
Kent, D. M., Paulus, J. K., van Klaveren, D. n., D'Agostino, R. n., Goodman, S. n., Hayward, R. n., Ioannidis, J. P., Patrick-Lake, B. n., Morton, S. n., Pencina, M. n., Raman, G. n., Ross, J. S., Selker, et al
2019
- **Why is Getting Rid of P-Values So Hard? Musings on Science and Statistics** *AMERICAN STATISTICIAN*
Goodman, S. N.
2019; 73: 26–30
- **Lost Evidence From Registered Large Long-Unpublished Randomized Controlled Trials: A Survey.** *Annals of internal medicine*
Tatsioni, A. n., Karassa, F. B., Goodman, S. N., Zarin, D. A., Fanelli, D. n., Ioannidis, J. P.
2019
- **Lack of Diagnostic Utility of "Amino Acid Dysregulation Metabotypes".** *Biological psychiatry*
Sainani, K. L., Goodman, S. N.
2018
- **Random-Effects Meta-analysis: Summarizing Evidence With Caveats.** *JAMA*
Serghiou, S., Goodman, S. N.
2018
- **Machine Learning, Health Disparities, and Causal Reasoning** *ANNALS OF INTERNAL MEDICINE*
Goodman, S. N., Goel, S., Cullen, M. R.
2018; 169 (12): 883+
- **Machine Learning, Health Disparities, and Causal Reasoning.** *Annals of internal medicine*

- Goodman, S. N., Goel, S., Cullen, M. R.
2018
- **Inappropriate Statistical Analysis and Reporting in Medical Research: Perverse Incentives and Institutional Solutions** *ANNALS OF INTERNAL MEDICINE*
Localio, A., Stack, C. B., Meibohm, A. R., Ross, E. A., Guallar, E., Wong, J. B., Cornell, J. E., Griswold, M. E., Goodman, S. N.
2018; 169 (8): 577-+
 - **Annals Understanding Clinical Research: Interpreting Results With Large P Values** *ANNALS OF INTERNAL MEDICINE*
Liao, J. M., Stack, C. B., Goodman, S.
2018; 169 (7): 485-+
 - **Rapid Bedside Evaluation of Seizures in the ICU by Listening to the Sound of Brainwaves: A Prospective Observational Clinical Trial of Ceribell's Brain Stethoscope Function** *NEUROCRITICAL CARE*
Hobbs, K., Krishnamohan, P., Legault, C., Goodman, S., Parvizi, J., Gururangan, K., Mlynash, M.
2018; 29 (2): 302-12
 - **How and why studies disagree about the effects of education on health: A systematic review and meta-analysis of studies of compulsory schooling laws** *SOCIAL SCIENCE & MEDICINE*
Hamad, R., Elser, H., Tran, D. C., Rehkopf, D. H., Goodman, S. N.
2018; 212: 168-78
 - **New Principles for Assessing** *ISSUES IN SCIENCE AND TECHNOLOGY*
Moher, D., Naudet, F., Cristea, I. A., Miedema, F., Ioannidis, J. P., Goodman, S. N.
2018; 35 (1): 20-23
 - **THE LARGE CAPACITY BLADDER OVER 600 ML IS ASSOCIATED WITH ONGOING INCOMPLETE BLADDER EMPTING FOLLOWING ANTERIOR AND/OR APICAL PROLAPSE REPAIR (2009-2015)**
Dobberfuhr, A. D., Shaffer, R. K., Goodman, S. N., Chen, B.
WILEY.2018: S289-S291
 - **Rapid Bedside Evaluation of Seizures in the ICU by Listening to the Sound of Brainwaves: A Prospective Observational Clinical Trial of Ceribell's Brain Stethoscope Function.** *Neurocritical care*
Hobbs, K., Krishnamohan, P., Legault, C., Goodman, S., Parvizi, J., Gururangan, K., Mlynash, M.
2018
 - **Clinical Trial Participants' Views of the Risks and Benefits of Data Sharing** *NEW ENGLAND JOURNAL OF MEDICINE*
Mello, M. M., Lieou, V., Goodman, S. N.
2018; 378 (23): 2202-11
 - **Statistical Code to Support the Scientific Story** *ANNALS OF INTERNAL MEDICINE*
Localio, A., Goodman, S. N., Meibohm, A., Cornell, J. E., Stack, C. B., Ross, E. A., Mulrow, C. D.
2018; 168 (11): 828-+
 - **Improving the integrity of published science: An expanded taxonomy of retractions and corrections** *EUROPEAN JOURNAL OF CLINICAL INVESTIGATION*
Fanelli, D., Ioannidis, J. A., Goodman, S.
2018; 48 (4)
 - **A serious nonsense publishing proposal** *NATURE*
Goodman, S. N.
2018; 553 (7687): 155
 - **Redefine statistical significance** *NATURE HUMAN BEHAVIOUR*
Benjamin, D. J., Berger, J. O., Johannesson, M., Nosek, B. A., Wagenmakers, E., Berk, R., Bollen, K. A., Brembs, B., Brown, L., Camerer, C., Cesarini, D., Chambers, C. D., Clyde, et al
2018; 2 (1): 6-10
 - **Redefine statistical significance.** *Nature human behaviour*
Benjamin, D. J., Berger, J. O., Johannesson, M., Nosek, B. A., Wagenmakers, E. J., Berk, R., Bollen, K. A., Brembs, B., Brown, L., Camerer, C., Cesarini, D., Chambers, C. D., Clyde, et al
2018; 2 (1): 6-10

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