

# Kosuke Imai

## Curriculum Vitae

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### Contact Information

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### Education

Ph.D. in Political Science, Harvard University (1999–2003).  
A.M. in Statistics, Harvard University (2000–2002).  
B.A. in Liberal Arts, The University of Tokyo (1994–1998).

### Positions

Assistant Professor, Department of Politics, Princeton University (2004–present).  
Visiting Researcher, Faculty of Economics, The University of Tokyo (August, 2006).  
Instructor, Department of Politics, Princeton University (2003–2004).

### Honors and Awards

*New Hot Paper*, for the most-cited paper in the field of Economics & Business in the last two months among papers published in the last year, for “Misunderstandings among Experimentalists and Observationalists about Causal Inference,” named by Thomson Reuters’ ScienceWatch (2009) with an interview of authors.

*Warren Miller Prize* for the best article published in *Political Analysis*, for “Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference,” awarded by the Society of Political Methodology and Oxford University Press (2008).

*Fast Breaking Paper* for the article with the largest percentage increase in citations among those in the top 1% of total citations across the social sciences in the last two years, for “Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference,” named by Thomson Reuters’ ScienceWatch (2008) with an interview of authors.

*Pharmacoepidemiology and Drug Safety Outstanding Reviewer Recognition* for the review “among the best of all reviews in 2008” (2008).

*Miyake Award* for the best political science article published in 2005, for “Do Get-Out-The-Vote Calls Reduce Turnout? The Importance of Statistical Methods for Field Experiments,” awarded by the Japanese Political Science Association (2006).

*Toppan Prize* for the best dissertation in political science, for *Essays on Political Methodology*, awarded by Harvard University (2004). Also, nominated for American Political Science Association E.E. Schattschneider Award for the best doctoral dissertation in the field of American government and politics.

*Clifford C. Clogg Scholarship Award*, the Inter-university Consortium for Political and Social Research (ICPSR), The University of Michigan (2000).

*AT&T Asia/Pacific Leadership Award* (1999).

## External Research Grants

National Science Foundation, (2009–2012). “Statistical Analysis of Causal Mechanisms: Identification, Inference, and Sensitivity Analysis,” (Methodology, Measurement, and Statistics Program and Political Science Program; SES–0918968). Principal Investigator. \$97,574.

National Science Foundation, (2009–2011). “Collaborative Research: The Measurement and Identification of Media Priming Effects in Political Science,” (Methodology, Measurement, and Statistics Program and Political Science Program; SES–0849715). Principal Investigator (with Nicholas Valentino). \$317,126.

National Science Foundation, (2008–2009). “New Statistical Methods for Randomized Experiments in Political Science and Public Policy,” (Political Science Program; SES–0752050). Principal Investigator. \$52,565.

National Science Foundation, (2006–2009). “Collaborative Research: Generalized Propensity Score Methods,” (Methodology, Measurement and Statistics Program; SES–0550873). Principal Investigator (with Donald B. Rubin and David A. van Dyk). \$460,000.

The Telecommunications Advancement Foundation, (2004). “Analyzing the Effects of Party Webpages on Political Opinions and Voting Behavior,” Principal Investigator (with Naoko Taniguchi and Yusaku Horiuchi). \$12,000.

## Publications in English

### Refereed Journal Articles

Imai, Kosuke and Teppei Yamamoto. “Causal Inference with Differential Measurement Error: Nonparametric Identification and Sensitivity Analysis.” *American Journal of Political Science*, Vol. 54, No. 2 (April), Forthcoming.

Imai, Kosuke, Ying Lu, and Aaron Strauss. “eco: R Package for Ecological Inference in  $2 \times 2$  Tables.” *Journal of Statistical Software*, Forthcoming.

Ho, Daniel E., Kosuke Imai, Gary King, and Elizabeth Stuart. “MatchIt: Nonparametric Preprocessing for Parametric Causal Inference.” *Journal of Statistical Software*, Forthcoming.

Imai, Kosuke, Gary King, and Clayton Nall. (2009). “The Essential Role of Pair Matching in Cluster-Randomized Experiments, with Application to the Mexican Universal Health Insurance Evaluation.” (with discussions) *Statistical Science*, Vol. 24, No. 1 (February), pp. 29–53.

King, Gary, Emmanuela Gakidou, Kosuke Imai, Jason Lakin, Ryan T. Moore, Clayton Nall, Nirmala Ravishankar, Manett Vargas, Martha María Téllez-Rojo, Juan Eugenio Hernández Ávila, Mauricio Hernández Ávila, and Héctor Hernández Llamas. (2009). “Public Policy for the Poor? A Randomized Ten-Month Evaluation of the Mexican Universal Health Insurance Program.” (with a comment) *The Lancet*, Vol. 373, No. 9673 (April), pp. 1447–1454.

Imai, Kosuke. (2009). “Statistical Analysis of Randomized Experiments with Nonignorable Missing Binary Outcomes: An Application to a Voting Experiment.” *Journal of the Royal Statistical Society, Series C (Applied Statistics)*, Vol. 58, No. 1 (February), pp. 83–104.

Imai, Kosuke, Gary King, and Olivia Lau. (2008). “Toward A Common Framework of Statistical Analysis and Development.” *Journal of Computational and Graphical Statistics*, Vol. 17, No. 4 (December), pp. 892–913.

Imai, Kosuke. (2008). “Variance Identification and Efficiency Analysis in Experiments under the Matched-Pair Design.” *Statistics in Medicine*, Vol. 27, No. 4 (October), pp. 4857–4873.

Ho, Daniel E., and Kosuke Imai. (2008). “Estimating Causal Effects of Ballot Order from a Randomized Natural Experiment: California Alphabet Lottery, 1978–2002.” *Public Opinion Quarterly*, Vol. 72, No. 2 (Summer), pp. 216–240.

Imai, Kosuke, Gary King, and Elizabeth A. Stuart. (2008). “Misunderstandings among Experimentalists and Observationalists: Balance Test Fallacies in Causal Inference.” *Journal of the Royal Statistical Society, Series A (Statistics in Society)*, Vol. 171, No. 2 (April), pp. 481–502.

Imai, Kosuke, Ying Lu, and Aaron Strauss. (2008). “Bayesian and Likelihood Ecological Inference for  $2 \times 2$  Tables: An Incomplete Data Approach.” *Political Analysis*, Vol. 16, No. 1 (Winter), pp. 41–69.

Imai, Kosuke. (2008). “Sharp Bounds on the Causal Effects in Randomized Experiments with “Truncation-by-Death”.” *Statistics & Probability Letters*, Vol. 78, No. 2 (February), pp. 144–149.

Imai, Kosuke and Samir Soneji. (2007). “On the Estimation of Disability-Free Life Expectancy: Sullivan’s Method and Its Extension.” *Journal of the American Statistical Association*, Vol. 102, No. 480 (December), pp. 1199–1211.

Horiuchi, Yusaku, Kosuke Imai, and Naoko Taniguchi. (2007). “Designing and Analyzing Randomized Experiments: Application to a Japanese Election Survey Experiment.” *American Journal of Political Science*, Vol. 51, No. 3 (July), pp. 669–687.

Ho, Daniel E., Kosuke Imai, Gary King, and Elizabeth A. Stuart. (2007). “Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference.” *Political Analysis*, Vol. 15, No. 3 (Summer), pp. 199–236. Winner of Warren Miller Prize.

Ho, Daniel E., and Kosuke Imai. (2006). “Randomization Inference with Natural Experiments: An Analysis of Ballot Effects in the 2003 California Recall Election.” *Journal of the American Statistical Association*, Vol. 101, No. 475 (September), pp. 888–900.

Imai, Kosuke, and David A. van Dyk. (2005). “MNP: R Package for Fitting the Multinomial Probit Model.” *Journal of Statistical Software*, Vol. 14, No. 3 (May), pp. 1–32. abstract reprinted in *Journal of Computational and Graphical Statistics* (2005) Vol. 14, No. 3 (September), p. 747.

Imai, Kosuke. (2005). “Do Get-Out-The-Vote Calls Reduce Turnout? The Importance of Statistical Methods for Field Experiments.” *American Political Science Review*, Vol. 99, No. 2 (May), pp. 283–300.

Imai, Kosuke, and David A. van Dyk. (2005). “A Bayesian Analysis of the Multinomial Probit Model Using Marginal Data Augmentation.” *Journal of Econometrics*, Vol. 124, No. 2 (February), pp. 311–334.

Imai, Kosuke, and David A. van Dyk. (2004). “Causal Inference With General Treatment Regimes: Generalizing the Propensity Score.” *Journal of the American Statistical Association*, Vol. 99, No. 467 (September), pp. 854–866.

Imai, Kosuke, and Gary King. (2004). “Did Illegal Overseas Absentee Ballots Decide the 2000 U.S. Presidential Election?” *Perspectives on Politics*, Vol. 2, No. 3 (September), pp. 537–549. Our analysis is a part of *The New York Times* article, “How Bush Took Florida: Mining the Overseas Absentee Vote” By David Barstow and Don van Natta Jr. July 15, 2001, Page 1, Column 1.

## Invited Contributions

Imai, Kosuke, Luke Keele, Dustin Tingley, and Teppei Yamamoto. “Causal Mediation Analysis in R,” in *Advances in Social Science Research Using R*, ed. H. D. Vinod (New York: Springer, 2009), Forthcoming.

Imai, Kosuke, Gary King, and Clayton Nall. (2009). “Rejoinder: Matched Pairs and the Future of Cluster-Randomized Experiments.” *Statistical Science*, Vol. 24, No. 1 (February), pp. 65–72.

## Other Publications

Ho, Daniel E. and Kosuke Imai. (2004). “The Impact of Partisan Electoral Regulation: Ballot Effects from the California Alphabet Lottery, 1978–2002.” Princeton Law & Public Affairs Paper No. 04-001; Harvard Public Law Working Paper No. 89.

Imai, Kosuke. (2003). “Essays on Political Methodology,” *Ph.D. Thesis*. Department of Government, Harvard University.

Imai, Kosuke. (2003). “Review of Jeff Gill’s *Bayesian Methods: A Social and Behavioral Sciences Approach*,” *The Political Methodologist*, Vol. 11 No. 1, 9–10.

Imai, Kosuke, and Jeremy M. Weinstein. (2000). “Measuring the Economic Impact of Civil War,” Working Paper Series No. 51, Center for International Development, Harvard University.

## Publications in Japanese

Imai, Kosuke. (2007). “Keiryō Seijigaku niokeru Ingateki Suiron (Causal Inference in Quantitative Political Science).” *Leviathan*, Vol. 40, Spring, pp. 224–233.

Horiuchi, Yusaku, Kosuke Imai, and Naoko Taniguchi. (2005). “Seisaku Jyōhō to Tōhyō Sanka: Field Jikken ni yoru Kensyō (Policy Information and Voter Participation: A Field Experiment).” *Nenpō Seijigaku (The Annals of the Japanese Political Science Association)*, 2005–I, pp. 161–180.

Taniguchi, Naoko, Yusaku Horiuchi, and Kosuke Imai. (2004). “Seitō Saito no Etsuran ha Tohyō Kōdō ni Eikyō Suruka? (Does Visiting Political Party Websites Influence Voting Behavior?)” *Nikkei Research Report*, Vol. IV, pp. 16–19.

## Statistical Software

Keele, Luke, Dustin Tingley, Teppei Yamamoto, and Kosuke Imai. “mediation: R Package for Causal Mediation Analysis.” available through The Comprehensive R Archive Network. 2009.

Imai, Kosuke. “experiment: R Package for Designing and Analyzing Randomized Experiments.” available through The Comprehensive R Archive Network. 2007.

Ho, Daniel E., Kosuke Imai, Gary King, and Elizabeth Stuart. “MatchIt: Nonparametric Preprocessing for Parametric Causal Inference.” available through The Comprehensive R Archive Network. 2005–2008.

Imai, Kosuke, Ying Lu, and Aaron Strauss. “eco: R Package for Ecological Inference in  $2 \times 2$  Tables.” available through The Comprehensive R Archive Network. 2004–2007.

Imai, Kosuke, and David A. van Dyk. “MNP: R Package for Fitting the Multinomial Probit Model.” available through The Comprehensive R Archive Network. 2004–2008.

Imai, Kosuke, Gary King, and Olivia Lau. “Zelig: Everyone’s Statistical Software.” available through The Comprehensive R Archive Network. 2004–2008.

## Selected Manuscripts

Imai, Kosuke, Dustin Tingley, and Teppei Yamamoto. “Experimental Identification of Causal Mechanisms.”

Imai, Kosuke, Luke Keele, and Dustin Tingley. “A General Approach to Causal Mediation Analysis.”

Imai, Kosuke and Aaron Strauss. “Planning the Optimal Get-out-the-vote Campaign Using Randomized Field Experiments.”

Imai, Kosuke, Luke Keele, and Teppei Yamamoto. “Identification, Inference, and Sensitivity Analysis for Causal Mediation Effects.”

Goldstein, Daniel, Kosuke Imai, Anja S. Göritz, and Peter M. Gollwitzer. “Nudging Turnout: Mere Measurement and Implementation Planning of Intentions to Vote.”

Harris-Lacewell, Melissa, Kosuke Imai, and Teppei Yamamoto. “Racial Gaps in the Responses to Hurricane Katrina: An Experimental Study.”

## Invited Seminars

Workshop on Matching Methods for Causal Inference, Institute of Behavioral Science, University of Colorado, Boulder, April 13, 2009.

One-Day Short Course on Statistical Methods for Causal Inference, Department of Political Science, Rice University. January 23, 2009.

Methodology Keynote, Graduate Student Conference on Experiments in Interactive Decision Making, Princeton University. November 22, 2008.

Columbia University (Department of Political Science, 2004, 2005, 2009; Department of Statistics, 2005; School of International and Public Affairs, 2007); Fordham University (Departments of Economics and Political Science, 2009); Georgetown University (Public Policy Institute, 2008); Harvard University (Department of Economics, 2003; Department of Government, 2005; Institute for Quantitative Social Science, 2008); Johns Hopkins University (Bloomberg School of Public Health, 2008); Kobe University (Department of Economics, 2006); New York University (Department of Politics, 2006, 2007); Nippon University (Japanese Political Methodology Society, scheduled); Northwestern University (Department of Political Science, 2008); Notre Dame (Department of Political Science,

2009); Ohio State University (Department of Political Science, 2002); Princeton University (Department of Economics, 2004; Department of Politics, 2002); Queen's University (Department of Economics and School of Policy Studies, 2006); Rutgers (Center for Discrete Mathematics and Theoretical Computer Science, 2007); Stanford University (Department of Political Science, 2002); University of California, Berkeley (Department of Political Science, 2002); University of California, Davis (Department of Political Science, 2002); University of Chicago (Department of Political Science, 2006); University of Colorado, Boulder (Department of Political Science, 2009); University of Michigan (Department of Political Science, 2005); University of Pennsylvania (Department of Statistics, 2006; Department of Biostatistics and Epidemiology, 2008; Graduate School of Education, 2008); University of Rochester (Department of Political Science, 2008); University of Tokyo (College of Arts and Sciences, 2005; Faculty of Economics, 2006; Faculty of Law, scheduled); University of Washington (Center for Statistics and the Social Sciences, 2005; Department of Political Science, 2002; Department of Statistics, 2002); University of Wisconsin, Madison (Department of Political Science, 2008; Department of Statistics, 2009); Waseda University (School of Political Science and Economics, 2005); Washington University in St. Louis (Department of Political Science, 2002).

## Teaching and Advising

### Graduate Courses

POL 502 Mathematics for Political Science: real analysis, linear algebra, calculus.

POL 571 Quantitative Analysis I: probability theory, statistical theory, linear models.

POL 572 Quantitative Analysis II: intermediate applied statistics.

POL 573 Quantitative Analysis III: applied Bayesian statistics, statistical methods for causal inference.

POL 574 Quantitative Analysis IV: advanced applied statistics with various topics.

POL 722 Basic Principles of Mathematical Probability and Statistics: intermediate mathematical probability and statistics.

### Undergraduate Courses

POL 345 Quantitative Analysis and Politics: a first course in statistics and probability for undergraduates.

POL 451 Statistical Methods in Political Science: basic probability and statistical theory, their applications in the social sciences.

## Former and Current Students

Teppe Yamamoto. Ph.D. student, Department of Politics, Princeton University.

Dustin Tingley. Ph.D. student, Department of Politics, Princeton University.

Aaron Strauss. Ph.D. student, Department of Politics, Princeton University.

Rachel Fester. Ph.D. student, Graduate School of Education, University of Pennsylvania.

Samir Soneji (Ph.D. in 2008, Dissertation Committee Chair). Robert Wood Johnson Foundation Postdoctoral Fellow, University of Pennsylvania.

Ying Lu (Ph.D. in 2005; Dissertation Committee Chair). Assistant Professor, Steinhardt School of Culture, Education, and Human Development, New York University.

## Editorial and Referee Service

Editorial board member, *Journal of Politics*, 2007–2009.

Referee for *American Journal of Political Science*, *American Political Science Review*, *American Politics Research*, *Biometrics*, *Biometrika*, *BMC Medical Research Methodology*, *Chapman & Hall/CRC Press*, *Electoral Studies*, *Empirical Economics*, John Wiley & Sons, *Journal of Applied Statistics*, *Journal of Business and Economic Statistics*, *Journal of Computational and Graphical Statistics*, *Journal of Conflict Resolution*, *Journal of Peace Research*, *Journal of Politics*, *Journal of the American Statistical Association*, *Journal of the Royal Statistical Society (Series A; Statistics in Society)*, *Journal of the Royal Statistical Society (Series C; Applied Statistics)*, *Legislative Studies Quarterly*, National Science Foundation (Economics, Political Science), *Pharmaceutical Statistics*, *Pharmacoepidemiology and Drug Safety*, *Political Analysis*, *Political Behavior*, *Political Communication*, *Political Research Quarterly*, *Population Health Metrics*, Princeton University Press, *Public Opinion Quarterly*, *Quarterly Journal of Economics*, *Quarterly Journal of Political Science*, Sage Publications, Springer, *Sociological Methodology*, *Statistical Methodology*, *Statistics in Medicine*, *Systems Biology*, U.S.-Israel Binational Science Foundation.

## Memberships

American Political Science Association; American Statistical Association; Midwest Political Science Association; The Society of Political Methodology.