

WENDY K. TAM CHO

University of Illinois at Urbana-Champaign
Department of Political Science
420 David Kinley Hall
1407 W. Gregory Dr.
Urbana, IL 61801

Phone: 217 333 9588
E-mail: wendycho@illinois.edu
Home page: <http://cho.pol.illinois.edu/wendy>

EDUCATION

- Ph.D. *Political Science*, University of California at Berkeley,
Berkeley, California, 1997
- M.A. *Statistics*, University of California at Berkeley,
Berkeley, California, 1997
- M.A. *Political Science*, University of California at Berkeley,
Berkeley, California, 1992
- J.D. Program *Law*, Cornell University,
Ithaca, New York, 1990–1991
- A.B. *Applied Mathematics* (applied field: *Computer Science*),
University of California at Berkeley, Berkeley, California, 1990
- A.B. *Political Science*, University of California at Berkeley,
Berkeley, California, 1990

ACADEMIC APPOINTMENTS

- University of Illinois at Urbana-Champaign
Professor, Department of Political Science, 2010–
Professor, Department of Statistics, 2010–
Professor, Department of Mathematics, 2018–
Professor, Department of Computer Science, 2020–
Professor, Department of Asian American Studies, 2010–
Professor, College of Law, 2018–
Senior Research Scientist, National Center for Supercomputing Applications, 2006–
Faculty, Illinois Informatics Institute, Data Analytics and Information Visualization, 2010–
Affiliate, Computational Science and Engineering Program, 2010–
Affiliate, CyberGIS Center for Advanced Digital and Spatial Studies, 2013–2018.
Affiliate, Cline Center for Advanced Social Research, 2007–
Affiliate, Program on Law, Behavior, and Social Science, College of Law, 2017–
Associate Professor, Departments of Political Science, Statistics, and Asian American
Studies, 2006–2010
- Stanford University
Visiting Fellow, Hoover Institution, 2018–2021
Fellow, Center for Advanced Study in the Behavioral Sciences, 2019–2020
- Northwestern University
Associate Professor, Department of Political Science, 2005–2006
- University of Illinois at Urbana-Champaign
Associate Professor, Departments of Political Science and Statistics, 2001–2005
Assistant Professor, Department of Political Science, 1997–2001
Assistant Professor, Department of Statistics, 1999–2001

PUBLICATIONS

- “A Parallel Evolutionary Multiple-Try Metropolis Markov Chain Monte Carlo Algorithm for Sampling Spatial Partitions,” with Yan Y. Liu. *Statistics and Computing*. 2021. Forthcoming.
- “Human-Centered Redistricting Automation in the Age of AI,” with Bruce E. Cain. *Science* 369, 6508 (September 4, 2020): 1179–1181.
— Press coverage by [TechCrunch \(Japanese version\)](#), [E.W. Scripps Television Stations](#), [Engadget](#), [Diginomica](#), [NetEase Intelligence](#)
- “A Spatially Explicit Evolutionary Algorithm for the Spatial Partitioning Problem,” with Yan Y. Liu. *Applied Soft Computing Journal* 90 (May 2020): Article 106129.
- “Parallel Hybrid Metaheuristics with Distributed Intensification and Diversification for Large-scale Optimization in Big Data Statistical Analysis,” with Yan Y. Liu. In C. Baru, J. Huan, L. Khan, X. T. Hu, R. Ak, Y. Tian, R. Barga, C. Zaniolo, K. Lee, & Y. F. Ye (Eds.), *Proceedings of the 2019 IEEE International Conference on Big Data*, pp. 3312–3320. Institute of Electrical and Electronics Engineers Inc.
- “Rejoinder to ‘Understanding our Markov Chain Significance Test’,” with Simon Rubinstein-Salzedo. *Statistics and Public Policy* 6, 1 (2019): 54.
- “Understanding Significance Tests from a Non-Mixing Markov Chain for Partisan Gerrymandering Claims,” with Simon Rubinstein-Salzedo. *Statistics and Public Policy* 6, 1 (2019): 44–49.
- “Technology-Enabled Coin Flips for Judging Partisan Gerrymandering.” *Southern California Law Review Postscript* 93 (May 2019): 11–27. https://southerncalifornialawreview.com/wp-content/uploads/2019/06/93_Cho_Final.pdf
- “Migration as an Opportunity to Register Changing Partisan Loyalty in the U.S.,” with James G. Gimpel and Iris Hui. *Population, Space and Place* 25, 4, e2218 (May 2019).
- “A Massively Parallel Evolutionary Markov Chain Monte Carlo Algorithm for Sampling Complicated Multimodal State Spaces,” with Yan Y. Liu. 2018. Extended Abstract. *SC18: The International Conference for High Performance Computing, Networking, Storage and Analysis*. November 11–16. Dallas, TX.
- “Algorithms Can Foster a More Democratic Society.” *Nature* 558, 7711 (June 28, 2018): 487. <https://www.nature.com/articles/d41586-018-05498-y>
- “Sampling from Complicated and Unknown Distributions: Monte Carlo and Markov Chain Monte Carlo Methods for Redistricting,” with Yan Y. Liu. *Physica A* 506 (September 2018): 170–178.
- “An Evolutionary Algorithm for Subset Selection in Causal Inference Models.” *Journal of the Operational Research Society* 69, 4 (2018): 630–644.
- “A Reasonable Bias Method for Redistricting: A New Tool for an Old Problem,” with Bruce E. Cain, Yan Y. Liu, and Emily Zhang. *William & Mary Law Review* 59, 5 (April 2018): 1521–1557.
- “Massively Parallel Evolutionary Computation for Empowering Electoral Reform: Quantifying Gerrymandering via Multi-objective Optimization and Statistical Analysis,” with Yan Y. Liu. 2017. Extended Abstract. *SC17: The International Conference for High Performance Computing, Networking, Storage and Analysis*. November 12–17. Denver, CO.
- “Measuring Partisan Fairness: How well does the Efficiency Gap Guard against Sophisticated as well as Simple-Minded Modes of Partisan Discrimination?” *University of Pennsylvania Law Review Online* 166 (July 2017): 17–36. <https://www.pennlawreview.com/essays/index.php?id=59>
— Press coverage by [The Weekly Standard](#), [WisCommunity](#)
- “Causal Inferences from Many Experiments.” *Journal of Applied Statistics* 44, 16 (2017): 2908–2922.

PUBLICATIONS (cont.)

- “Toward a Talismanic Redistricting Tool: A Computational Method for Identifying Extreme Redistricting Plans,” with Yan Y. Liu. *Election Law Journal* 15, 4 (December 2016): 351–366.
 — First Place Winner of the 2016 Common Cause “Gerrymander Standard” writing competition.
 — Press coverage by [Cray Inc.](#), the [National Center for Supercomputing Applications](#), [Science Node](#), [Chicago Inno](#), [Vox](#), [Quanta Magazine](#), [HPC Wire](#), [Top 500](#), [WIRED](#), [EdgyLabs](#), [Admin Magazine](#), [Primeur Magazine](#), [Salon](#), [Communications of the ACM](#), the [Blue Waters Annual Report](#), [Nature](#), [Big Think](#), [Reason](#), [The Washington Post](#), [NPR](#), [NOVA PBS](#), [eWeek](#), [Communications of the ACM](#), [Medium](#), [Dziennikz Związkowy Polish Daily News](#), [Siam News](#), [UI News Bureau](#), [News-Gazette](#), [Agence Science-Presse](#), [Tech-net.cz](#), the [Mathematical Association of America](#), [Akron Beacon Journal](#), [Cincinnati.com](#), [The Indiana Lawyer](#), [NCSA](#), [R&D Magazine](#), and [HPC Wire](#).
- “A Scalable Evolutionary Algorithm with Intensification and Diversification Protocols Designed for Statistical Models,” with Yan Y. Liu. 2016. Extended Abstract. *SC16: The International Conference for High Performance Computing, Networking, Storage and Analysis*. November 13–18. Salt Lake City, UT.
- “PEAR: A Massively Parallel Evolutionary Computation Approach for Political Redistricting Optimization and Analysis,” with Yan Y. Liu and Shaowen Wang. *Swarm and Evolutionary Computation* 30 (October 2016): 78–92.
- “A Parallel Evolutionary Algorithm for Subset Selection in Causal Inference Models,” with Yan Y. Liu. 2016. In *Proceedings of XSEDE 2016: Diversity, Big Data, and Science at Scale*. Association for Computing Machinery, a7. ACM International Conference Proceeding Series. Volume 17–21. Article 7, pp. 1–8. July 17–21.
- “A High-Performance Approach for Solution Space Traversal in Combinatorial Optimization,” with Yan Y. Liu. 2015. Extended Abstract. *SC15: The International Conference for High Performance Computing, Networking, Storage and Analysis*. November 16–19. Austin, TX.
- “A Scalable Computational Approach to Political Redistricting Optimization,” with Yan Y. Liu and Shaowen Wang. 2015. In *Proceedings of the XSEDE 2015 Conference: Scientific Advancements Enabled by Enhanced Cyberinfrastructure*. Association for Computing Machinery, a6. ACM International Conference Proceeding Series. Article 6, pp. 1–2. July 26–30.
 — The overall redistricting project that began with this publication was the winner of the 2019 Hyperion Research [HPC Innovation Excellence Award](#) which recognizes scientific achievement by users of high performance computing (HPC) technologies.
- “An Information Theoretic Approach to Network Tomography,” with George Judge. *Applied Economics Letters* 22, 1 (January 2015): 1–6.
- “Voter Migration and the Geographic Sorting of the American Electorate,” with James G. Gimpel and Iris S. Hui. *Annals of the Association of American Geographers* 103, 4 (2013): 856–870.
 — Press coverage by [The New York Times](#), [Harvard Political Review](#), [London School of Economics US Centre Blog](#)
- “Balance Optimization Subset Selection (BOSS): An Alternative Approach to Causal Inference with Observational Data,” with Alexander Nikolaev, Sheldon H. Jacobson, Jason Sauppe, and Edward C. Sewell. *Operations Research* 61, 2 (March/April 2013): 398–412.
- “An Optimization Approach for Making Causal Inferences,” with Jason J. Sauppe, Alexander G. Nikolaev, Sheldon H. Jacobson and Edward C. Sewell. *Statistica Neerlandica* 27, 2 (May 2013): 211–226.
- “Geo-Graphs: An Efficient Model for Enforcing Contiguity and Hole Constraints in Planar Graph Partitioning,” with Douglas M. King, Sheldon H. Jacobson, and Edward C. Sewell. *Operations Research* 60, 5 (September–October 2012): 1213–1228.
- “Geographic Information Systems and the Spatial Dimensions of American Politics,” with James G. Gimpel. *Annual Review of Political Science* 15 (June 2012): 443–460.

PUBLICATIONS (cont.)

- "The Tea Party and the Geography of Collective Action," with James G. Gimpel and Daron R. Shaw. *Quarterly Journal of Political Science* 7, 2 (April 2012): 105–133.
- "An Analysis of Daily Predictions for the 2008 United States Presidential Election," with Steven E. Rigdon, Sheldon H. Jacobson, Edward C. Sewell, and Christopher J. Rigdon. *Case Studies in Business, Industry and Government Statistics* 4, 1 (November 2011): 1–8.
- "Environmental Determinants of Racial Attitudes Redux: The Critical Decisions Related to Operationalizing Context," with Neil Baer. *American Politics Research* 39, 2 (March 2011): 414–433.
- "Stigler's Approach to Recovering the Distribution of First Significant Digits in Natural Data Sets," with Joanne Lee and George G. Judge. *Statistics and Probability Letters* 80, 2 (February 2010): 82–88.
- "Rough Terrain: Spatial Variation in Campaign Contributing and Volunteerism," with James G. Gimpel. *American Journal of Political Science* 54, 1 (January 2010): 74–89.
- "Legislative Success in a Small World: Social Network Analysis and the Dynamics of Congressional Legislation," with James H. Fowler. *Journal of Politics* 72, 1 (January 2010): 124–135.
- "A Bayesian Prediction Model for the United States Presidential Election," with Steven E. Rigdon, Sheldon H. Jacobson, Edward C. Sewell, and Christopher J. Rigdon. *American Politics Research* 37, 4 (July 2009): 700–724.
- "Presidential Voting and the Local Variability of Economic Hardship," with James G. Gimpel. *The Forum* 7, 1 (April 2009): Article 1.
- "A Political Powerhouse in Search of a Home," with James G. Gimpel. *Asian American Policy Review* (2008) 17: 91–98.
- "Geographic Proximity versus Institutions: Evaluating Borders as Real Political Boundaries," with Erinn P. Nicley. *American Politics Research* 36, 6 (November 2008): 803–823.
- "Recovering Vote Choice from Partial Incomplete Data," with George G. Judge. *Journal of Data Science* 6, 2 (April 2008): 155–171.
- "Emanating Political Participation: Untangling the Spatial Structure behind Participation," with Thomas J. Rudolph. *British Journal of Political Science* 38, 2 (April 2008): 273–289.
- "Information Theoretic Solutions for Correlated Bivariate Processes," with George G. Judge. *Economics Letters* 97, 3 (December 2007): 201–207.
- "Breaking the (Benford) Law: Statistical Fraud Detection and Campaign Finance," with Brian J. Gaines. *The American Statistician* 61, 3 (August 2007): 218–223.
- "Prospecting for (Campaign) Gold," with James G. Gimpel. *American Journal of Political Science* 51, 2 (April 2007): 255–268.
- "Spatial Dimensions of Arab American Voter Mobilization after September 11," with James G. Gimpel, and Tony Wu. *Political Geography* 26, 3 (March 2007): 330–351.
- "Clarifying the Role of SES in Political Participation: Policy Threat and Arab American Mobilization," with James G. Gimpel and Tony Wu. *Journal of Politics* 68, 4 (November 2006): 974–988.
- "Residential Concentration, Socialization, and Voter Turnout," with James G. Gimpel and Joshua J. Dyck. *Journal of Politics* 68, 1 (February 2006): 156–167.
- "Panethnicity Revisited: Asian Indians, Asian American Politics, and the Voting Rights Act," with Albert H. Yoon. *UCLA Asian Pacific American Law Journal* 10 (2005): 8–30.

PUBLICATIONS (cont.)

- "The Persistence of White Ethnicity in New England Politics," with James G. Gimpel. *Political Geography* 23, 8 (November 2004): 987–1008.
- "On California's 1920 Alien Land Law: The Psychology and Economics of Discrimination," with Brian J. Gaines. *State Politics and Policy Quarterly* 4, 3 (Fall 2004): 271–293.
- "Subcontinental Divide: Asian Indians and Asian American Politics," with Suneet P. Lad. *American Politics Research* 32, 3 (May 2004): 239–263.
- "The Limits of Ecological Inference: The Case of Split-Ticket Voting," with Brian J. Gaines. *American Journal of Political Science* 48, 1 (January 2004): 152–171.
- "Contagion Effects and Ethnic Contribution Networks." *American Journal of Political Science* 47, 2 (April 2003): 368–387.
- "Conceptualizing Space," with Luc Anselin. *Political Analysis* 10, 3 (Summer 2002): 301–303.
- "Spatial Effects and Ecological Inference," with Luc Anselin. *Political Analysis* 10, 3 (Summer 2002): 276–297.
- "Tapping Motives and Dynamics Behind Campaign Contributions: Insights from the Asian American Case." *American Politics Research* 30, 4 (July 2002): 347–383.
- "Foreshadowing Strategic Pan-Ethnic Politics: Asian American Campaign Finance Activity in Varying Multicultural Contexts." *State Politics and Policy Quarterly* 1, 3 (September 2001): 273–294.
- "Asian-Pacific-American Campaigns, Elections, and Elected Officials," with James S. Lai, Thomas P. Kim, and Okiyoshi Takeda. *PS: Political Science and Politics* 34, 3 (September 2001): 611–617.
- "Latent Groups and Cross-Level Inferences." *Electoral Studies* 20, 2 (June 2001): 243–263.
- "Strange Bedfellows: Politics, Courts, and Statistics: Statistical Expert Testimony in Voting Rights Cases," with Albert H. Yoon. *Cornell Journal of Law and Public Policy* 10, 2 (Spring 2001): 237–264.
- "Naturalization, Socialization, Participation: Immigrants and (Non-) Voting." *Journal of Politics* 61, 4 (November 1999): 1140–1155.
- "If the Assumption Fits...: A Comment on the King Ecological Inference Solution." *Political Analysis* 7 (1998): 143–163.
- "Asians—A Monolithic Voting Bloc?" *Political Behavior* 17, 2 (June 1995): 223–249.

REFEREED CONFERENCES

- "A High-Performance Evolutionary Computation Framework for Scalable Spatial Optimization," with Yan Y. Liu. 2018. *ICCS: International Conference on Computational Science: Science at the Intersection of Data, Modelling and Computation*. June 11–13. Wuxi, China.

BOOK CHAPTERS

- "Spatial Dimensions of American Politics," with Iris Hui in Cao, Kai and Elisabete A. Silva, eds., *Comprehensive Geographic Information Systems. GIS Applications for Socio-Economics and Humanity*. Elsevier. 2018, Volume 3, Chapter 13, pp. 181–188.

- “Legislative Networks,” with Nils Ringe and Jennifer Nicoll Victor in Victor, Jennifer Nicoll, Mark Lubell, and Alexander H. Montgomery, eds., *Oxford University Press Handbook of Political Networks*, Oxford University Press, 2017, Chapter 19, pp. 471–489.
- “Generalizing Benford’s Law: A Re-examination of Falsified Clinical Data,” with Joanne Lee and George Judge in Miller, Steven J., Arno Berger, and Ted Hill, eds., *Theory and Applications of Benford’s Law*, Princeton and Oxford: Princeton University Press, 2014, pp. 302–314.
- “Ecological Inference,” in Badie, Bertrand, Dirk Berg-Schlosser, and Leonardo Morlino, eds., *International Encyclopedia of Political Science*, Sage Publications, Inc., 2011, pp. 1185–1187.
- “Demythicalizing the Asian-American Campaign Contributor,” in Cain, Bruce E., Jaime Regalado, and Sandra Bass, eds., *Racial and Ethnic Politics in California, Volume III*, Berkeley, CA: Berkeley Public Policy Press, Institute of Governmental Studies, 2008, pp. 37–60.
- “Cross-Level/Ecological Inference,” with Charles F. Manski, in Box-Steffensmeier, Janet, Henry E. Brady, and David Collier, eds., *Oxford Handbook of Political Methodology*. Oxford University Press, 2008, pp. 547–569.
- “An Information Theoretic Approach to Ecological Estimation and Inference,” with George G. Judge and Douglas J. Miller, in King, Gary, Ori Rosen, and Martin Tanner, eds., *Ecological Inference: New Methodological Strategies*. Cambridge University Press, 2004, pp. 162–187.
- “Campaigns, Elections, and Elected Officials,” with James S. Lai, Thomas P. Kim, and Okiyoshi Takeda, in Nakanishi, Don T. and James S. Lai, eds., *Asian American Politics: Law, Participation, and Policy*, Rowman & Littlefield Publishers, Inc., 2003, pp. 317–330. Reprinted from *PS: Political Science and Politics* 34, 3 (September 2001): 611–617.
- “Candidates, Donors, and Voters in California’s First Blanket-Primary Elections,” with Brian J. Gaines, in Cain, Bruce E. and Elisabeth R. Gerber, eds., *Voting at the Political Fault Line: California’s Experiment with the Blanket Primary*, Berkeley, CA: University of California Press, 2002, pp. 171–191.
- “Crossover Voting Before the Blanket: Primaries versus Parties in California History,” with Brian J. Gaines, in Cain, Bruce E. and Elisabeth R. Gerber, eds., *Voting at the Political Fault Line: California’s Experiment with the Blanket Primary*, Berkeley, CA: University of California Press, 2002, pp. 12–35.
- “Asian Americans as the Median Voters: An Exploration of Attitudes and Voting Patterns on Ballot Initiatives,” with Bruce E. Cain, in Chang, Gordon H., ed., *Asian Americans and Politics: Perspectives, Experiences, Prospects*, Washington, DC: Woodrow Wilson Center Press and Stanford, CA: Stanford University Press, 2001, pp. 133–152.

RESEARCH GRANTS

NATIONAL SCIENCE FOUNDATION GRANTS

- National Science Foundation, Social, Behavioral, and Economic Sciences. Political Science Program. 2017–2020. “Collaborative Research: High-Performance Computational Standards for Redistricting.” Principal Investigator. Co-PIs: Yan Liu and Bruce Cain. Grant No. SES-1725418/1728902. \$453,476.
- National Science Foundation, Major Research and Instrumentation Program. Software Institutes. 2014–2017. “Acquisition of a National CyberGIS Facility for Computing and Data-Intensive Geospatial Research and Education.” Senior Personnel. Grant No. 1429699. \$1,787,335.
- National Science Foundation, Social, Behavioral, and Economic Sciences. Methodology, Measurement, and Statistics Program and Political Science Program. 2009–2012. Research Grant for the project “Collaborative Research: Shifting Paradigms: Causal Inference via Subset Selection.” Principal Investigator. Co-PIs: Sheldon Jacobson and Edward Sewell. Grant No. SES-0849223. \$278,767.

National Science Foundation, Computer & Information Science & Engineering Program, Information, Integration, and Informatics Cluster. 2008–2009. Research Grant for the project “A Computational Approach to Zoning Analysis.” Principal Investigator. Co-PI: Sheldon Jacobson. Grant No. IIS-0827540. \$99,999

National Science Foundation, Social, Behavioral, and Economic Sciences. Methodology, Measurement, and Statistics Program. 1998–1999. Research Grant for the project “Advancement of Methods for Ecological Inference.” Principal Investigator. Grant No. SBR-9806448.

SUPERCOMPUTING GRANTS

COVID-19 HPC Consortium and NSF XSEDE Allocation Grant, “High-Performance Causal Inference for COVID-19 Mitigation and Response.” Co-Principal Investigator (PI: Yan Y. Liu, Co-PI David G. Hwang). 2020–2021. **50K CPU hours** and **3,000 GPU hours** on Pittsburgh Supercomputing Center (PSC) Bridges, and **1,000 node hours** on Texas Advanced Computing Center (TACC) Stampede2.

Blue Waters Supercomputing Allocation Grant, “Parallel Hybrid Metaheuristics with Distributed Intensification and Diversification for Large-scale Optimization in Statistical Analysis.” Principal Investigator (Co-PI: Yan Y. Liu). 2019–2020. One-year allocation of 50,000 node hours, approximately **0.8 million normalized computing hours** on Blue Waters’s 724,480 processor cores.

San Diego Supercomputing Center (SDSC) Comet Supercomputing Allocation Grant. “Extreme-Scale Computing for Large Spatial Optimization and Sampling.” Principal Investigator (Co-PI: Yan Y. Liu). 2019–2020. NSF XSEDE Allocation Award. **1,000 GPU hours**.

Texas Advanced Computing Center (TACC) Stampede2 Supercomputing Allocation Grant. “Extreme-Scale Computing for Large Spatial Optimization and Sampling.” Principal Investigator (Co-PI: Yan Y. Liu). 2019–2020. NSF XSEDE Allocation Award. 1,600 node hours, approximately **108,800 normalized computing hours** on Stampede2’s 285,600 Knights Landing and 83,328 Skylake processor cores.

Blue Waters Supercomputing Allocation Grant, “Massively Parallel Evolutionary Markov Chain Monte Carlo for Sampling Complicated Multimodal State Spaces.” Principal Investigator (Co-PIs: Yan Y. Liu and Simon Rubinstein-Salzedo). 2018–2019. One-year allocation of 100,000 node hours, approximately **1.6 million normalized computing hours** on Blue Waters’s 724,480 processor cores.

Blue Waters Supercomputing Allocation Grant, “Enabling Redistricting Reform: A Computational Study of Zoning Optimization.” Principal Investigator (Co-PIs: Yan Y. Liu and Bruce Cain). 2017–2018. One-year allocation of 400,000 node hours, approximately **6.4 million normalized computing hours** on Blue Waters’s 724,480 processor cores.

Blue Waters Supercomputing Allocation Grant, “A Computational Model for Causal Inference via Subset Selection.” Principal Investigator. 2015–2016. One-year allocation of 50,000 node hours, approximately **800,000 normalized computing hours**, on Blue Waters’s 724,480 processor cores.

Blue Waters Supercomputing Allocation Grant, “An Extreme-Scale Computational Approach to Redistricting Optimization.” Co-Principal Investigator (Co-PIs: Shaowen Wang and Yan Y. Liu). 2013–2015. One-year allocation of 0.6 million node hours, approximately **9.8 million normalized computing hours**, on Blue Waters’s 724,480 processor cores.

ADDITIONAL RESEARCH GRANTS

Interdisciplinary Innovation Initiative (In³) Grant, “Analytical Enhancements to a Unique UI Resource.” Co-Principal Investigator (with Scott Althaus, Peter Nardulli, Dan Roth, and Joseph Houston). 2012. \$50,000.

CIRCLE/Pew Charitable Trusts Project Grant, “Field Experiments on Turnout in the 2004 Elections.” 2004. Co-Principal Investigator (with James Gimpel and Daron Shaw).
 Ahmanson Community Trust Foundation Grant, “Statistical Approaches to the Analysis of Surname Coded Data.” Principal Investigator, James Gimpel. Project Subcontract to Wendy K. Tam Cho January 2002–January 2005. Total Grant: \$101,000.
 University of Illinois Course Development Grant, 1999.
 University of Illinois Research Board Grant, 1999–2000, 2001–2002.
 Arnold O. Beckman Research Distinction Grant Award. University of Illinois Research Board. 1998–1999.

HONORARY SOCIETIES

John Simon Guggenheim Memorial Foundation Fellow. 2015–2016. Guggenheim Fellows are appointed on the basis of impressive achievement in the past and exceptional promise for future accomplishment.
 Elected Fellow. 2018. Society for Political Methodology. Selection to the position of Fellow of the Society for Political Methodology honors individuals who have made outstanding scholarly contributions to the development of political methodology, and whose methodological work has had a major international impact on subsequent scholarship in the field, in the discipline more broadly, and where appropriate in other areas.

AWARDS AND HONORS

[HPC Innovation Excellence Award](#) by Hyperion Research at [ISC19](#), June 2019, Frankfurt, Germany. The award recognizes outstanding applications of high performance computing (HPC) for business and scientific achievements.
 First Place Winner in the 2016 Common Cause “Gerrymander Standard” writing competition for the article, “Toward a Talismanic Redistricting Tool: A Fully Balanced Computational Method for Identifying Extreme Redistricting Plans,” with Yan Y. Liu.
 List of Teachers Ranked as Excellent by their Students. University of Illinois at Urbana-Champaign. Multiple Years.
 Leon Weaver Award for “Migration and Party Switching in the American Electorate.” Best Paper presented at a panel sponsored by the APSA Representation and Electoral Systems Division in 2010.
 Volunteer of the Year. 1997. Alzheimer’s Services of the East Bay (ASEB). Berkeley, CA. ASEB is committed to pioneering dementia-friendly communities that provide quality adult health care services for vulnerable populations.

FELLOWSHIPS AND APPOINTMENTS

Visiting Fellow. Hoover Institution. Stanford University. 2018–2021.
 Fellowship. Center for Advanced Study in the Behavioral Sciences. Stanford University. 2019–2020.
 Research Associate. 2014–15. Center for Advanced Study. University of Illinois at Urbana-Champaign. Research appointment to pursue project, “An Extreme-Scale Computational Approach to Redistricting Analysis.”
 Merriam Professorial Scholar. 2010–2012. Cline Center for Democracy. University of Illinois at Urbana-Champaign.
 Faculty Fellowship. National Center for Supercomputing Applications. University of Illinois at Urbana-Champaign. Summer 2006.
 Fellowship, Center for Democracy in a Multiracial Society. University of Illinois at Urbana-Champaign, AY 2004–2005.

MEMBERSHIP IN PROFESSIONAL SOCIETIES

American Political Science Association (APSA)

Midwest Political Science Association (MPSA)

Institute of Electrical and Electronics Engineers (IEEE)

Association for Computing Machinery Special Interest Group on High Performance Computing (ACM sigHPC)

BOOK REVIEWS

“Asian American Political Action: Suburban Transformation,” by James S. Lai.

Political Science Quarterly 127, 1 (Spring 2012): 165–166.

“The Snake Dance of Asian American Activism: Community, Vision, and Power,” by Michael Liu, Kim Geron, and Tracy Lai. *Political Science Quarterly* 125, 2 (Summer 2010): 326–329.

“The Election After Reform: Money, Politics, and the Bipartisan Campaign Reform Act,” by Michael Malbin, ed. *Election Law Journal* 6, 1 (January 2007): 100–103.

“Why Americans Split Their Tickets: Campaigns, Competition and Divided Government,” by Barry C. Burden and David C. Kimball. *Party Politics* 10, 2 (January 2004): 241–243.

“Political Participation and Ethnic Minorities: Chinese Overseas in Malaysia, Indonesia, and the U.S.,” by Amy Freedman. *Journal of Social Issues in Southeast Asia* 18, 1 (April 2003): 164–167.

“The Making of Asian America through Political Participation,” by Pei-te Lien. *Perspectives on Politics* 1, 1 (March 2003): 190–191.

“Econometric Foundations,” by Ron C. Mittelhammer, George G. Judge, and Douglas J. Miller. *The Political Methodologist* 10, 2 (Spring 2002): 18–19.

“A Solution to the Ecological Inference Problem: Reconstructing Individual Behavior from Aggregate Data,” by Gary King. *Journal of Politics* 60, 4 (November 1998): 1244–1245.

BLOGS, POPULAR PRESS, NEWSLETTERS, AND OTHER WRITINGS

“For Partisan Gerrymandering, an Ounce of Prevention is Worth a Pound of Cure.”

[Election Law Blog](#). July 3, 2019.

“Technology-Enabled Coin Flips for Judging Partisan Gerrymandering.”

[Election Law Blog](#). May 26, 2019.

“The ‘Everything Bagel’ in Redistricting” (with Yan Liu, Bruce Cain, and Emily Zhang).

[Election Law Blog](#). May 27, 2018.

“Voter Migration is a Significant Factor in the Geographic Sorting of the American Electorate.”

[LSE US Centre](#).

“Pay Attention to Asian-American Voters,” with James G. Gimpel.

The Politico 1, 51 (May 2007): 3–4.

“Getting Out the Asian American Vote: The Value in the Unpredictable,” with James G. Gimpel. *Campaigns and Elections* 25, 6 (July 2004): 44–45.

“Open Source Spatial Data Analysis,”

The Political Methodologist 12, 2 (Fall 2004): 13–17.

INVITATIONS (selected)

- Keyfitz Lecture. The Fields Institute for Research in Mathematical Sciences. Toronto, Canada. May 2020. Lecturers are selected by a distinguished international committee consisting of both mathematicians and social scientists. The Fields Institute is a leading Canadian research centre, which promotes activities in a broad range of areas relating to the mathematical sciences (mathematics, statistics, computer science) and all of their applications.
- Keynote Speaker. Master of Mathematical Finance Symposium: The World Forum on Finance, Technology, Investments & Risk Management. The Blue Mountains, Ontario, Canada. January 2019.
- Invited Speaker. Annual Meeting of the Missouri Bar and Judicial Conference. St. Louis, MO. September 2018.
- Invited Speaker. *The Inaugural Year Series*. Sarah Lawrence College. Invited by Mathematics Department. Bronxville, NY. April 2018.
- Invited Speaker. Mathematics in Science and Society Colloquium. University of Illinois at Urbana-Champaign. Mathematics Department. February 2018.
- Invited Speaker. Data Institute SF Conference. Drawing leaders of industry and academia to explore the latest theoretical advances and technological applications in data science in order to promote the next generation of cross-disciplinary research. University of San Francisco. October 2017. Declined.
- Invited Speaker. Canadian Industrial and Applied Mathematics Society Annual Meeting. Halifax, Nova Scotia. July 2017. Declined.
- Invited Keynote Speaker. GIS Day: A Celebration of of GIS Research and Application across Disciplines. Purdue University. November 2016.
- Invited Workshop Presenter. Neural Information Processing Systems (NIPS), a single-track machine learning and computational neuroscience conference, Montréal, Canada. December 2015.
- Invited Speaker. Initiative for Mathematical Science and Engineering. Applied Geometry and Topology and Networks, Learning, and Games Conference. University of Illinois at Urbana-Champaign Mathematics Department. February 2014.
- Invited Keynote Speaker. November 2010. Political Geography Conference. University of Copenhagen. Denmark.
- Invited Distinguished Speaker. 2008. U.S. Army Conference on Applied Statistics. Virginia Military Institute, Lexington, Virginia.

PROFESSIONAL ACTIVITIES AND SERVICE**Offices**

- APSA Executive Council, 2007–09, Governing Board for the American Political Science Association (elected by discipline-wide election)
- Member-at-Large, Society for Political Methodology, APSA Section, 2004–2006.

Editor

- Political Analysis*, 2009–2010, with Robert Franzese and Andrew Martin.
- The Political Methodologist*, 2010–2013, with Jake Bowers and Brian Gaines.

Associate Editor

- Political Analysis*, 2007–2009.

Editorial Board Member

- American Journal of Political Science*, 2018–2023.
- American Politics Research*, 2003–2019.
- American Political Science Review*, 2012–2020.

Journal of Politics, 2007–2009, 2010–2014.
Journal of Election Technology and Systems, 2013–2016.
Political Analysis, 2005–2007.
Political Behavior, 2019–2023.
PS: Political Science & Politics, 2006–2009.
Ralph Bunche Journal of Public Affairs, 2008–2012.
SSRN, Political Methods: Quantitative Methods, 2007–2010.
State Politics and Policy Quarterly, 2004–2014.

Award Committees

R.H. Durr Award Committee for the best paper applying quantitative methods to a substantive issue. Midwest Political Science Association, 2020.
 Heinz Eulau Award Committee to recognize the best article published in the *American Political Science Review* during the previous academic year. 2019.
 Political Methodology Career Award Committee to recognize an outstanding career of intellectual accomplishment and service to the profession in the Political Methodology field. 2015–2018.
 Best Graduate Student Poster Award Committee for best graduate student poster presented at the Political Methodology Conference in 2014.
 Best Paper Award Committee to recognize the best paper published in the *American Politics Research* journal in 2013.
 Emerging Scholar Award Committee for a scholar within ten years of his degree, who is making notable contributions to the field of political methodology, 2011 & 2012.
 Franklin L. Burdette Pi Sigma Alpha Award Committee (Chair) for the best paper presented at the Annual Meeting of the American Political Science Association, 2009.
 R.H. Durr Award Committee for the best paper applying quantitative methods to a substantive issue. Midwest Political Science Association, 2004.
 Harold Gosnell Award Committee for excellence in political methodology awarded for best methodology conference paper, 2004.
 Warren Miller Prize Committee for best article published in *Political Analysis*, 2004.

Program Coordinator/Committees

Graduate Admissions Committee, Annual Summer Political Methodology Conference. The Society for Political Methodology, University of Toronto, Toronto, Canada. 2020.
 Methodology Section Head, Annual Conference of the Midwest Political Science Association, Chicago, IL, 2016.
 Program Committee, Annual Summer Political Methodology Conference, The Society for Political Methodology, Princeton University, Princeton, NJ. 2011.
 Graduate Admissions Committee, Annual Summer Political Methodology Conference, The Society for Political Methodology, University of Michigan, Ann Arbor, MI. 2008.
 Methodology Section Head, Annual Conference of the Southern Political Science Association, New Orleans, LA, 2007.
 Program Committee, Annual Summer Political Methodology Conference, The Society for Political Methodology, Stanford University, Stanford, CA. 2004.
 Methodology Section Head, Annual Meeting of the Southern Political Science Association, New Orleans, LA, 2004.

Advisory Boards and Panels

National Center for Supercomputing Applications (NCSA) Resource Allocation Committee. Reviewed proposals for resource allocation grants on the Blue Waters supercomputer. 2020–2021.

- Educational Advisory Board. John Simon Guggenheim Foundation. 2019–2023.
- National Science Foundation. Division of Information & Intelligent Systems (IIS). Computer & Information Science & Engineering Program (CISE). BIG DATA Computer and Network Systems Panel. 2018.
- Board of Directors. President. C&!: Camp for Algorithmic and Mathematical Play. A Computer Science and Mathematics Summer Camp for Children who Love Math. 2020–2021.
- Board of Directors. C&!: Camp for Algorithmic and Mathematical Play. A Computer Science and Mathematics Summer Camp for Children who Love Math. 2017–2020.
- National Science Foundation. Division of Social, Behavioral, and Economic Sciences. Resource Implementations for Data Intensive Research in the Social Behavioral and Economic Sciences Panel (RIDIR), 2017.
- National Science Foundation. Committee of Visitors. NSF Advisory Committee. Methodology, Measurement, and Statistics Program representative for the Social, Behavioral and Economic Sciences Division (SBE). Reviewed and advised programs in SBE to help shape the future direction of the NSF SBE program. 2016.
- Advisory Board. Program for Interdisciplinary and Industrial Internships at Illinois (PI₄). PI₄ is an NSF funded program to broaden the research background and the future career prospects of mathematics graduate students. 2014–2019.
- Academic Expert to the Presidential Commission on Election Administration. Commission established by President Obama to identify best practices and make recommendations to promote the efficient administration of elections. 2013.
- Advisory Board. Danish Research Council funded project on contextual influences on social and political attitudes. University of Copenhagen and Aarhus University. 2013–2016.
- National Science Foundation. Division of Social, Behavioral, and Economic Sciences and Division of Education and Human Resources. Building Community and Capacity for Data-Intensive Research Panel. 2012.
- National Science Foundation. Division of Social, Behavioral, and Economic Sciences. Methodology, Measurement, and Statistics Panel, 2011–2012.
- National Science Foundation, Division of Information and Intelligent Systems. Human Centered Computing Cluster CAREER Panel. 2010. Declined.
- National Science Foundation. Division of Information and Intelligent Systems. Computing in the Cloud Panel, 2010.
- Review Panel, *Digging into Data*, joint funding initiative of the National Endowment for the Humanities, the National Science Foundation, Canada's Social Sciences and Humanities Research Council, and the UK's Joint Information Systems Committee. 2009. Declined.
- Invited Member of the bipartisan Immigration Policy Roundtable to advise Congress and President Obama on a new immigration policy agenda. 2008–2009. Declined.
- National Science Foundation. Division of Social, Behavioral, and Economic Sciences. Political Science Panel, 2006–2007.
- National Science Foundation. Division of Social and Economic Sciences. Methodology, Measurement, and Statistics Program. Mathematical, Social, and Behavioral Sciences Panel, 2004.

Outreach

- Founder, Teacher, and Organizer. Champaign-Urbana Math Circle. Weekly educational mathematics enrichment and outreach program open to children and adults of all ages. 2013–
- Coach. MATHCOUNTS Team. Nationwide Middle School Math Program. 2016–2018. First Place Team in Northern California East Bay Regional Competition. 2017.
- Invited Faculty. C&!: Camp for Algorithmic and Mathematical Play. Summer 2018; Summer 2019; Summer 2020. A Computer Science and Mathematics Summer Camp for Children who Love Math. University of New Mexico. Albuquerque, NM.

Founding Faculty. C&M: Camp for Algorithmic and Mathematical Play. Summer 2017. A Computer Science and Mathematics Summer Camp for Children who Love Math. University of Arkansas. Fayetteville, AR.

Invited Faculty. Epsilon Camp. Summer 2016. A Mathematics Summer Program for 7 to 11 year olds who are captivated by math. Washington University. St. Louis, MO.

Invited Faculty. AwesomeMath Camp. Summer 2015. A three-week intensive summer camp for mathematically gifted students from around the globe. Cornell University. Ithaca, NY. Declined.

Invited Faculty. Delta Camp. Summer 2015. A Mathematics Summer Program for 6.5 to 8 year olds who are lit up by math. Washington University. St. Louis, MO.

Invited Faculty. Delta Camp. Summer 2014. A Mathematics Summer Program for 6 and 7 year olds with extremely high IQs. Seattle Pacific University. Seattle, WA.

Invited Faculty. Epsilon Camp. Summer 2012. A Mathematics Summer Camp for Exceptionally and Profoundly Gifted Children. Colorado College. Colorado Springs, CO.

Instructor. University Laboratory High School Summer Program. 2011. Taught "Math, Sports, Puzzles, and Games." Urbana, IL.

University Committees (selected)

CRESS/ATLAS Advisory Committee (College Committee), 2002.

Council on General Education (College Committee), 2008–2009.

Committee on Admissions and Academic Standards (College Committee), 2010–2011.

Campus Research Board (2014–2017).

Discipline Committees (selected)

Long Range Planning Committee. Society for Political Methodology. 2017–2019.

Diversity Committee. Society for Political Methodology. 2008–2016.

APSA Council Finance Committee 2009.

MPSA Nominations Committee, 2010.

Co-Chair, APSA Committee on the Status of Asian Pacific Americans in the Profession, 2011–2014.

APSA Minority Fellowship Selection Committee, 2011–2013.

Promotion and Tenure Reviews

Boston College

Columbia University

Cornell University

Georgetown University

Harvard University

National Research University, Higher School
of Economics (Moscow, Russia)

Scripps College

Stanford University

Pennsylvania State University

Princeton University

Tsinghua University (Beijing, China)

University at Buffalo

University of California at Berkeley

University of California at Irvine

University of Illinois at Urbana-Champaign

University of Michigan

University of Massachusetts Amherst

University of Missouri at Columbia

University of North Texas

Yale University

Invited Talks

Awesome Math Summer Camp

Blue Waters Symposium

Brown University

Calvin College

College of William and Mary

Law School

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| Colorado College | University of California at Davis |
| Columbia University | University of California at Los Angeles |
| Institute for Social and Economic Research and Policy | Institute for Pure and Applied Mathematics |
| Political Science Department | University of California at Santa Barbara |
| Dartmouth University | University of Chicago |
| Duke University | Political Science Department |
| Florida State University | Law School |
| Georgetown University | University of Copenhagen, Denmark |
| Illinois State Legislature | University of Illinois at Urbana-Champaign |
| Leaders High School | Center for Advanced Study |
| Man Group (Quantitative Investment Management) | Computer Science Department |
| Missouri Bar Association | Coordinated Science Laboratory |
| Massachusetts Institute of Technology | Graduate Society of Women Engineers |
| Northwestern University | Law School |
| Math Department (Emerging Scholars Program) | National Center for Supercomputing Applications |
| Political Science Department | Mathematics Department |
| Statistics Department | Political Science Department |
| Pennsylvania State University | Psychology Department |
| Pontificia Universidad Católica de Chile | Science Policy Group |
| Princeton University | Statistics Department |
| Proof School | Tufts University |
| Purdue University | University of Michigan |
| Political Science Department | University of Pennsylvania |
| Statistics Department | University of Rochester |
| Libraries and School of Information Studies | University of Toronto |
| Rochester University | Fields Institute for Research in Mathematical Sciences |
| Sarah Lawrence College | University of Washington |
| Sandia National Laboratories | University of Wisconsin, Madison |
| Santa Fe Institute | Virginia Military Institute |
| Seattle Pacific University | University of San Francisco |
| Stanford University | Mathematics Department |
| Center for Advanced Study in the Behavioral Sciences | Analytics/Data Science Program |
| Political Science Department | Washington University St. Louis |
| Toulouse School of Economics, France | Yale University |
| University of California at Berkeley | |

Reviewer (for over 100 different academic journals, agencies, foundations, or presses, spanning a dozen disciplines)

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|----------------------------------------------------------|-----------------------------------------------------|
| <i>Advances in Statistical Analysis</i> | <i>Communication Research</i> |
| <i>American Journal of Political Science</i> | <i>Comparative Political Studies</i> |
| <i>American Political Science Review</i> | <i>Computer Methods and Programs in Biomedicine</i> |
| <i>American Politics Research</i> | <i>Computers and Geosciences</i> |
| <i>Annals of the American Association of Geographers</i> | <i>DuBois Review</i> |
| <i>Applied Geography</i> | <i>Economics Letters</i> |
| <i>Automation in Construction</i> | <i>Election Law Journal</i> |
| <i>British Journal of Political Science</i> | <i>Electoral Studies</i> |
| <i>California Journal of Politics and Policy</i> | <i>Entropy</i> |
| <i>Communications in Statistics</i> | <i>Ethnic and Racial Studies</i> |
| | <i>European Journal of Operational Research</i> |

Geographical Analysis
GeoJournal
Historical Methods
International Interactions
International Journal of Forecasting
International Journal of Atomic and Nuclear Physics
International Journal of Public Opinion Research
International Organizations
International Regional Science Review
International Review of Administrative Sciences
Journal of East Asian Studies
Journal of Applied Statistics
Journal of the Association for Information Science and Technology
Journal of Computational and Graphical Statistics
Journal of Clinical Epidemiology
Journal of Geographical Systems
Journal of International Students
Journal of Mathematical and Statistical Analysis
Journal of Mathematical Psychology
Journal of the Operational Research Society
Journal of Political Marketing
Journal of Politics
Journal of Race, Ethnicity, and Politics
Journal of the Royal Society Interface
Journal of the Royal Statistical Society
Journal of Statistical Software
Journal of Theoretical Politics
Journal of Women, Politics, and Policy
Law & Policy
Legislative Studies Quarterly
Midsouth Political Science Review
Nature: International Journal of Science
Nonprofit and Voluntary Sector Quarterly
Nucleic Acids Research
Open Statistics and Probability Journal
Papers of Applied Geography Conferences
Party Politics
Perspectives on Politics
PLOS ONE
Political Analysis
Political Behavior
Political Opinion Quarterly
Political Research Quarterly
Political Science Research and Methods
Politics & Gender
Politics, Groups, and Identities
Population Research and Policy Review
Proceedings of the National Academy of Sciences
The Professional Geographer
PS: Political Science & Politics
Public Choice
Quarterly Journal of Political Science Research & Politics
Review of International Organizations Science
Scientific Reports
Social Forces
Social Networks
Social Problems
Social Science Research
Social Science Quarterly
Sociological Methodology
Sociological Methods and Research
SoftwareX
Swarm and Evolutionary Computation
TEST: An Official Journal of the Spanish Society of Statistics and Operations
Theoretical Economics Letters
Urban Affairs Review
World Politics
 C3.ai Digital Transformation Institute
 Cambridge University Press
 Chapman & Hall/CRC
 Houghton Mifflin
 Illinois Community Informatics Initiative
 Israel Science Foundation
 John D. and Catherine T. MacArthur Foundation
 Blue Waters Allocations
 Kuwait Foundation for the Advancement of Sciences
 National Science Foundation
 Committee of Visitors
 Division of Education and Human Resources
 Division of Information & Intelligent Systems
 Division of Social, Behavioral, and Economic Sciences
 National Center for Supercomputing Applications
 Faculty Fellows Program
 Oxford University Press
 Peter Lang Publishing
 Polity Press
 Rowman & Littlefield Publishers
 Russell Sage Foundation
 SAGE Publishing
 Time-Sharing Experiments for the Social Sciences
 University of Illinois Research Board
 Wiener Wissenschafts-, Forschungs- und Technologiefonds