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Employment

Professor of Political Science, Pennsylvania State University. 2020–Present.
DeGrandis-McCourtney Early Career Professor in Political Science. 2018–Present.
Associate Professor of Political Science, Pennsylvania State University. 2015–2020.
Assistant Professor of Political Science, University of Massachusetts Amherst. 2010–2015.

Affiliations

Associate Director, Center for Social Data Analytics, Pennsylvania State University, Fall 2018–Present
Director of Graduate Studies, Programs in Social Data Analytics, Pennsylvania State University, Fall 2017–Present
Faculty Affiliate, Pennsylvania State University Institute for Computational and Data Sciences, Fall 2015–Present.
Visiting Fellow, Statistical and Applied Mathematical Sciences Institute (Research Triangle Park, NC), Fall 2013.
Faculty Affiliate, UMass Amherst Computational Social Science Initiative, Fall 2010 – Spring 2015.
Associate Director, Institute for Social Science Research, University of Massachusetts Amherst, Spring 2014 – Spring 2015.

Education

Ph.D. Political Science, University of North Carolina at Chapel Hill, 2010
Specialties: Research Methods and American Politics
M.A. Political Science, University of North Carolina at Chapel Hill, 2008
B.A. Mathematical Economics and Public Policy, Eastern Connecticut State University, 2005,
Summa Cum Laude

Publications

Book

1. Skyler J. Cranmer, Bruce A. Desmarais, and Jason W. Morgan. *Inferential Network Analysis*. Analytical Methods for Social Research. Cambridge University Press, 2020

Journal Articles

41. Christian Schmid, Ted Hsuan Yun Chen, and Bruce Desmarais. Generative dynamics of supreme court citations: Analysis with a new statistical network model. *Political Analysis*, Accepted
40. John Schoeneman, Boliang Zhu, and Bruce A. Desmarais. Complex dependence in foreign direct investment: network theory and empirical analysis. *Political Science Research and Methods*, page 117, 2020
39. Fridolin Linder, Bruce Desmarais, Matthew Burgess, and Eugenia Giraudy. Text as policy: Measuring policy similarity through bill text reuse. *Policy Studies Journal*, 48(2):546–574, 2020

38. Frederick J Boehmke, Mark Brockway, Bruce A Desmarais, Jeffrey J Harden, Scott LaCombe, Fridolin Linder, and Hanna Wallach. Spid: A new database for inferring public policy innovativeness and diffusion networks. *Policy Studies Journal*, 48(2):517–545, 2020
37. Skyler J Cranmer, Bruce A Desmarais, and Benjamin W Campbell. The contagion of democracy through international networks. *Social Networks*, 61:87–98, 2020
36. Xi Liu, Clio Andris, and Bruce A Desmarais. Migration and political polarization in the us: An analysis of the county-level migration network. *PloS one*, 14(11), 2019
35. Shana Scogin, Sarah Petersen, Jeffrey Harden, and Bruce Desmarais. modelltest: An r package for unbiased model comparison using cross validation. *Journal of Open Source Software*, 4(41):1542, 9 2019
34. Bruce A. Desmarais. Punctuated equilibrium or incrementalism in policymaking: What we can and cannot learn from the distribution of policy changes. *Research & Politics*, 6(3), 2019
33. Paul E Stillman, James D Wilson, Matthew J Denny, Bruce A Desmarais, Skyler J Cranmer, and Zhong-Lin Lu. A consistent organizational structure across multiple functional subnetworks of the human brain. *NeuroImage*, 197:24–36, 2019
32. Carisa Bergner, Bruce A Desmarais, and John Hird. Speaking truth in power: Scientific evidence as motivation for policy activism. *Journal of Behavioral Public Administration*, 2(1), 2019
31. Sayali Phadke and Bruce A Desmarais. Considering network effects in the design and analysis of field experiments on state legislatures. *State Politics & Policy Quarterly*, 19(4):451–473, 2019
30. Mia Costa, Bruce A Desmarais, and John A Hird. Public comments’ influence on science use in us rulemaking: The case of epa’s national emission standards. *The American Review of Public Administration*, 49(1):36–50, 2019
29. Shankar Bhamidi, Suman Chakraborty, Skyler Cranmer, and Bruce Desmarais. Weighted exponential random graph models: Scope and large network limits. *Journal of Statistical Physics*, 173(3-4):704–735, 2018
28. Bruce A Desmarais. Discussion of “inferring social structure from continuous-time interaction data”. *Applied Stochastic Models in Business and Industry*, 34(2):107–109, 2018
27. Jake Bowers, Bruce A. Desmarais, Mark Frederickson, Nahomi Ichino, Hsuan-Wei Lee, and Simi Wang. Models, methods and network topology: Experimental design for the study of interference. *Social Networks*, 54:196 – 208, 2018
26. Paul E Stillman, James D Wilson, Matthew J Denny, Bruce A Desmarais, Shankar Bhamidi, Skyler J Cranmer, and Zhong-Lin Lu. Statistical modeling of the default mode brain network reveals a segregated highway structure. *Scientific reports*, 7(1):11694, 2017
25. Philip Leifeld, Skyler Cranmer, and Bruce Desmarais. Temporal exponential random graph models with btergm: Estimation and bootstrap confidence intervals. *Journal of Statistical Software, Articles*, 83(6):1–36, 2018
24. Skyler J Cranmer and Bruce A Desmarais. What can we learn from predictive modeling? *Political Analysis*, 25(2):145–166, 2017
23. James D. Wilson, Matthew J. Denny, Shankar Bhamidi, Skyler J. Cranmer, and Bruce A. Desmarais. Stochastic Weighted Graphs: Flexible Model Specification and Simulation. *Social Networks*, 49:37–47, 2017
22. Frederick J Boehmke, Abigail Matthews Rury, Bruce A Desmarais, and Jeffrey J Harden. The seeds of policy change: Leveraging diffusion to disseminate policy innovations. *Journal of health politics, policy and law*, 42(2):285–307, 2017
21. James ben Aaron, Matthew Denny, Bruce Desmarais, and Hanna Wallach. Transparency by conformity: A field experiment evaluating openness in local governments. *Public Administration Review*, 77(1):68–77, 2017

20. Skyler J Cranmer and Bruce A Desmarais. A critique of dyadic design. *International Studies Quarterly*, 60(2):355–362, 2016
19. Mia Costa, Bruce A Desmarais, and John A Hird. Science use in regulatory impact analysis: The effects of political attention and controversy. *Review of Policy Research*, 33(3):251–269, 2016
18. Bruce A. Desmarais, Jeffrey J. Harden, and Frederick J. Boehmke. Persistent Policy Pathways: Inferring Diffusion Networks in the American States. *American Political Science Review*, 109(2):392–406, 2015
17. Bruce A. Desmarais, Vincent G. Moscardelli, Brian F. Schaffner, and Michael S. Kowal. Measuring Legislative Collaboration: The Senate Press Events Network. *Social Networks*, 40:43–54, 2015
16. Bruce A. Desmarais, Raymond J. La Raja, and Michael S. Kowal. The Fates of Challengers in US House Elections: The Role of Extended Party Networks in Supporting Candidates and Shaping Electoral Outcomes. *American Journal of Political Science*, 59(1):194–211, 2015
15. Bruce A. Desmarais and John A. Hird. Public Policy’s Bibliography: The Use of Research in U.S. Regulatory Impact Analyses. *Regulation & Governance*, 8(4):497–510, 2014
14. Bruce A. Desmarais and Jeffrey J. Harden. An Unbiased Model Comparison Test Using Cross-Validation. *Quality & Quantity*, 48(4):2155–2173, 2014
13. Bruce A. Desmarais and Jeffrey J. Harden. Testing for Zero-Inflation in Count Models: Bias Correction for the Vuong Test. *The Stata Journal*, 13(4):810–835, 2013
12. Skyler J. Cranmer, Tobias Heinrich, and Bruce A. Desmarais. Reciprocity and the Structural Determinants of the International Sanctions Network. *Social Networks*, 36(January):5–22, 2014
11. Bruce A. Desmarais and Skyler J. Cranmer. Micro-level interpretation of exponential random graph models with application to estuary networks. *Policy Studies Journal*, 40(3):402–434, 2012.
10. Skyler J. Cranmer, Bruce A. Desmarais, and Justin H. Kirkland. Toward a Network Theory of Alliance Formation. *International Interactions*, 38(3):295–324, 2012
9. Stuart M. Benjamin and Bruce A. Desmarais. Standing the Test of Time; The Breadth of Majority Coalitions and the Fate of U.S. Supreme Court Precedents. *Journal of Legal Analysis*, 4(2):445–469, 2012.
8. Skyler J. Cranmer, Bruce A. Desmarais, and Elizabeth Menninga. Complex Dependencies in the Alliance Network. *Conflict Management and Peace Science*, 29(3):279–313, 2012.
7. Bruce A. Desmarais and Jeffrey J. Harden. Comparing partial likelihood and robust estimation methods for the cox regression model. *Political Analysis*, 20(1):113–135, 2012.
6. Bruce A. Desmarais and Skyler J. Cranmer. Statistical inference for valued-edge networks: The generalized exponential random graph model. *PLoS ONE*, 7(1):e30136, 01 2012.
5. Bruce A. Desmarais. Lessons in disguise: Multivariate predictive mistakes in collective choice models. *Public Choice*, 151(3):719–737, 2012.
4. Bruce A. Desmarais and Skyler J. Cranmer. Statistical Mechanics of Networks: Estimation and Uncertainty. *Physica A*, 391(4):1865–1876, 2012.
3. Skyler J. Cranmer and Bruce A. Desmarais. Inferential Network Analysis with Exponential Random Graph Models. *Political Analysis*, 19(1):66–86, 2011.
2. Jeffrey J. Harden and Bruce A. Desmarais. Linear Models with Outliers: Choosing Between Conditional-Mean and Conditional-Median Methods. *State Politics & Policy Quarterly*, 11(4):371–389, 2011
1. Allison T. Freeman and Bruce A. Desmarais. Portfolio Adjustment to Home Equity Accumulation among CRA Borrowers. *Journal of Housing Research*, 20(2):141–160, 2011

8. Fangcao Xu, Bruce Desmarais, and Donna Peuquet. Stand: A spatio-temporal algorithm for network diffusion simulation. In *Proceedings of the 3rd ACM SIGSPATIAL International Workshop on GeoSpatial Simulation*, GeoSim '20, page 2029, New York, NY, USA, 2020. Association for Computing Machinery
7. Sangyeon Kim, Omer F Yalcin, Samuel E Bestvater, Kevin Munger, Burt L Monroe, and Bruce A Desmarais. The effects of an informational intervention on attention to anti-vaccination content on youtube. In *Proceedings of the International AAAI Conference on Web and Social Media*, volume 14, pages 949–953, 2020
6. Bruce A Desmarais and John A Hird. Policy-relevant science: The depth and breadth of support networks. In *Complex Networks XI*, pages 385–392. Springer, 2020
5. T. Marple, B. Desmarais, and K. L. Young. Collapsing corporate confusion: Leveraging network structures for effective entity resolution in relational corporate data. In *2017 IEEE International Conference on Big Data (Big Data)*, pages 2637–2643, Dec 2017
4. C. S. Schmid and B. A. Desmarais. Exponential random graph models with big networks: Maximum pseudolikelihood estimation and the parametric bootstrap. In *2017 IEEE International Conference on Big Data (Big Data)*, pages 116–121, Dec 2017
3. Peter Krafft, Juston Moore, Bruce Desmarais, and Hanna Wallach. Topic-Partitioned Multinetwork Embeddings. In *Proceedings of the 26th Annual Conference on Neural Information Processing Systems*, 2012
2. Bruce A. Desmarais and Skyler J. Cranmer. Forecasting the Locational Dynamics of Transnational Terrorism: A Network Analytic Approach. In *Proceedings of the European Intelligence and Security Informatics Conference (EISIC) 2011*. IEEE Computer Society, 2011.
1. Bruce A. Desmarais and Skyler J. Cranmer. Consistent Confidence Intervals for Maximum Pseudolikelihood Estimators. *Neural Information Processing Systems 2010 Workshop on Computational Social Science and the Wisdom of Crowds*, 2010.

Chapters in Edited Volumes

2. John Schoeneman and Bruce Desmarais. Network modeling: estimation, inference, comparison, and selection. In Luigi Curini & Robert Franzese, editor, *The SAGE handbook of research methods in political science and international relations*, chapter 46, pages 876–894. SAGE Publications, London, 2020
1. Bruce A. Desmarais and Skyler J. Cranmer. Statistical inference in political networks research. In Jennifer Nicoll Victor, Alexander H. Montgomery, and Mark Lubell, editors, *The Oxford Handbook of Political Networks*. Oxford University Press, 2017

Software

4. Shana Scogin, Sarah Petersen, Jeff Harden, and Bruce A. Desmarais. *modeLLtest: Compare Models with Cross-Validated Log-Likelihood*, 2020. R package version 1.0.3
3. Fridolin Linder and Bruce A. Desmarais. *NetworkInference: Inferring latent diffusion networks*, 2017. R package version 1.1.1
2. Matthew J. Denny, James D. Wilson, Skyler Cranmer, Bruce A. Desmarais, and Shankar Bhamidi. *GERGM: Estimation and Fit Diagnostics for Generalized Exponential Random Graph Models*, 2016. R package version 0.10.5
1. Philip Leifeld, Skyler J. Cranmer, and Bruce A. Desmarais. *xergm: Extensions for Exponential Random Graph Models*, 2016. R package version 1.7.0

Presentations

Recent Invited Talks

13. "Attention to the COVID-19 pandemic on Twitter: Partisan differences among U.S. state legislators." Facebook Core Data Science, March 25th, 2021.
12. "Network Event History Analysis for Modeling Public Policy Adoption with Latent Diffusion Networks." Quantitative Social Science Colloquium, Princeton University, April 12th, 2019.
11. "Complex Dependence in Foreign Direct Investment: Network Theory and Empirical Analysis." Workshop on Modeling Spatial and Network Interdependence in International Relations, University of St. Gallen, December 8, 2018.
10. "Complex Dependence in Foreign Direct Investment: Network Theory and Empirical Analysis." ISA Workshop on Modeling Spatial and Network Interdependence in International Relations, San Francisco, April 3, 2018.
9. "A Network Model for Textual Communications Application to Government Email Corpora." Center for Statistics and the Social Sciences, University of Washington, Seattle. April 19, 2017.
8. "Rountable on Federalism, Intergovernmental Affairs, and Public Administration." Midwest Political Science Association Annual Conference. April 8, 2016.
7. "Campaign Finance and Primary Elections." Meeting of the Campaign Finance Task Force, Stanford University. February, 4, 2016.
6. "Entity Ambiguity." Big Data and Large Corporate Networks: Enhancing Data Quality Through Standards for the Research Community, University of Amsterdam, Amsterdam. December 15, 2015.
5. "Communication Network Content and Structure: A Modeling Approach with Application to Gender Mixing in Local Government Internal E-Mail Communication." Northeast Political Methodology Meeting, New York University, May 2, 2014.
4. "Reflections on the Predictive Modeling of Interstate Conflict." ISA Working Group on Forecasting International Events, Toronto, March 25, 2014.
3. "Inferring Policy Diffusion Networks in the American States." New Frontiers in Policy Diffusion Conference, University of Iowa, March 14-15, 2014.
2. "Topic-Specific Latent Space Modeling of Government Communication Networks." Department of Computational Social Science, George Mason University, January 15, 2014.
1. "Inferring Policy Diffusion Networks in the American States." Conference on Causality in Political Networks, University of Chicago, May, 10 2013.

Recent Conference Presentations

16. "Diffusion of Candidates in Campaign Finance Networks." Political Networks Conference, 2018, George Mason University.
15. "A Network Model for Textual Communications Application to Government Email Corpora." Annual Meeting of the Society for Political Methodology, 2017, University of Wisconsin.
14. "Models, Methods and Network Topology: Experimental Design for the Study of Interference." Southern Political Science Association Annual Meeting. San Juan, PR. January 7, 2016.
13. "Modeling Interpersonal Government Communication Networks." Southern Political Science Association Annual Meeting. New Orleans, LA. January, 2015.
12. "Learning in the Sunshine: Analysis of Local Government Email Corpora." KDD at Bloomberg. Bloomberg LP Headquarters, New York, 2014.
11. "Inferring Policy Diffusion Networks in the American States." Annual Meeting of the Society for Political Methodology, University of Virginia, 2013.
10. "Inferring Policy Diffusion Networks in the American States." Political Networks Conference, Indiana University at Bloomington, 2013.

9. "Punctuated Equilibrium and Friction in Policymaking: Empirical Evidence and Theoretical Implications." Midwest Political Science Association Annual Meeting, Chicago, 2013.
8. "Topic-Specific Latent Space Modeling of Government Communication Networks." Workshop on Information in Networks, New York University, 2012.
7. "Strategic Interdependence on the U.S. Supreme Court: The Analysis of Voting on the Merits." Political Networks Conference, University of Colorado at Boulder, 2012.
6. "The Senate Press Events Network: Another Look at Legislative Collaboration." Midwest Political Science Association Annual Meeting, Chicago, 2012.
5. "The Generalized Exponential Random Graph Model'." Political Networks Conference, University of Michigan at Ann Arbor, 2011.
4. "Consistent Confidence Intervals for Maximum Pseudolikelihood Estimators." Neural Information Processing Systems Workshop on Computational Social Science and the Wisdom of Crowds, Whistler, BC, 2010.
3. "The Exponential Random Configuration Model for the Empirical Analysis of Interdependent Political Choices." American Political Science Association Annual Meeting, Washington, DC, 2010.
2. "The Temporal Exponential Random Graph Model", Political Networks Conference, Duke University, 2010.
1. "The Exponential Random Configuration Model for the Empirical Analysis of Interdependent Political Choices." Annual Meeting for the Society of Political Methodology, University of Iowa, 2010.

Invited Workshops

8. Introduction to Network Analysis in R (Political Network Conference, 2016–2018)
7. Network Analysis: Statistical Inference with Exponential Random Graph Models (UNC Chapel Hill, Odum Institute, May 2014)
6. TERGM: Exponential Random Graph Models for Dynamic Network Data (George Mason University, January 2014)
5. Advanced Network Analysis (ICPSR Summer Program, 2012–2015, 2018)
4. Introduction to Network Analysis (UNC Chapel Hill, Odum Institute, November 2013)
3. TERGM: Exponential Random Graph Models for Dynamic Network Data (Political Networks Conference, June 2013)
2. Advanced Bayesian Statistics (first two of four weeks) (ICPSR Summer Program, 2011)
1. Network Analysis Workshop, (The Ohio State University, May 2011)

Grants

11. NSF Award Number SES- 2028675. "RAPID: Collaborative Research: The Diffusion of State Policy Responses to the 2019 Novel Coronavirus," effective 05/15/2020; \$16,417.00.
10. Institute for CyberScience Seed Grant, Pennsylvania State University, "Measuring Scalable Social Connectivity in Complex Networks of Intercity Flows," effective June 30, 2017 and expires June 30, 2018. Co-PI, Clio Andris. \$24,537.
9. NSF Award Number SES-1637089. "RIDIR: Collaborative Research: DAPPR: Diffusion Analytics for Public Policy Research" effective October 1, 2016 and expires September 30, 2019. Penn State total: \$142,425.
8. NSF Award Number SES-1558661. "Collaborative Research: An Expanded Framework for Inferring Public Policy Diffusion Networks." Effective June 15, 2016 and expires May 31, 2018. Penn State total: \$178,953.

7. NSF Award Number SES-1357606. “Collaborative Research: Specification and Estimation of Exponential Family Random Graph Models for Weighted Networks.” effective April 15, 2014 and expires April 14, 2015. UMass Amherst total: \$78,131.
6. Russell Sage Foundation. “The Revolving Door in Financial Regulation: Elite Networks and the Consequences of Unequal Access on Policymaking.” effective January 01, 2015 and expires December 31, 2015. UMass Total: \$77,658.
5. NSF Award Number CISE-1320219. “Organizational Responsiveness to Open Outside Input: A Modeling Approach based on Statistical Text and Network Analysis.” effective September 1, 2013 and expires August 31, 2016. Co-PI with Hanna Wallach (UMass Amherst; PI). Total: \$499,326.
4. NSF Award Number SES-1360104. “Scientific Evidence in Regulation and Governance.” effective May 1, 2014 and expires May 1, 2017. PI with John Hird (UMass Amherst; Co-PI). Total: \$527,233.
3. Faculty Research Grant, University of Massachusetts Amherst Office of Research Development, 01/2013–12/2013. Total: \$14,560
2. Proposal Preparation Grant, University of Massachusetts Amherst College of Social and Behavioral Sciences, 01/2011–12/2011. Total: \$10,000
1. Research Support Grant, University of Massachusetts Amherst College of Social and Behavioral Sciences, 01/2011 – 05/2011. Total: \$4,000

Awards

3. 2015 Jack Walker Award. Recognizes an article published in the last two calendar years that makes an outstanding contribution to research and scholarship on political organizations and parties. Awarded by the Political Organizations and Parties Section of the American Political Science Association. Co-winner with Michael Kowal and Ray La Raja for, “The Fates of Challengers in US House Elections: The Role of Extended Party Networks in Supporting Candidates and Shaping Electoral Outcomes.” Published in the *American Journal of Political Science*, 2015.
2. Best Conference Paper on Political Networks, 2013. Awarded by the Political Networks Section of the American Political Science Association. Co-winner with Jeffrey J. Harden and Frederick J. Boehmke for, “Inferring Policy Diffusion Networks in the American States.” Presented at the Annual Meeting of the Society for Political Methodology, University of Virginia, 2013.
1. Fellow for the Program on Computational Methods for the Social Sciences, Statistical and Applied Mathematical Sciences Institute, Fall 2013.

Teaching

Courses Taught

8. Machine Learning for Political Science (Graduate: 2021)
7. Research Design for Social Data Analytics (Undergraduate: 2016, 2018)
6. Statistical Methods for Political Research (Graduate: 2018, 2019, 2020)
5. Political Network Analysis (Graduate: 2013, 2014, 2016, 2017, 2020)
4. Approaches and Issues in Social Data Analytics (Graduate: 2015, 2016, 2017)
3. Congress and the Legislative Process (Undergraduate: 2012, 2013, 2014)
2. Introduction to Quantitative Analysis (Graduate: 2012, 2014)
1. Official Secrecy in the United States, (Undergraduate: 2010, 2012)

External Service

15. Host, Annual Conference on Political Networks (PolNet) 2021
14. Editorial Board Member, *State Politics & Policy Quarterly*, 2020 – Present.
13. 2019–2020 Member, Christopher Z. Mooney (state politics) Dissertation Prize Selection Committee
12. 2018–2019 President, Political Networks section of the American Political Science Association.
11. Ninth Annual Conference on New Directions in Analyzing Text as Data, 2018, Program Committee Member.
10. 2018 Best Graduate Student Poster Award Committee Chair, State Politics & Policy Conference.
9. 2017 Best Paper Award Committee Chair, Political Organizations and Parties section of the American political Science Association.
8. Program Committee Member, International Conference on Social Informatics, 2014, 2016, 2017
7. Editorial Board Member, *State Politics & Policy Quarterly*, 2011 – 2014.
6. Political Networks Conference Fellowship Committee, member 2012, chair 2013.
5. Political Networks Conference Program Committee Co-chair, 2014.
4. Program Committee Member, Workshop on Computational Social Science and the Wisdom of Crowds. Held at Neural Information Processing Systems 2011, Sierra Nevada, Spain.
3. National Science Foundation Review Panel Member, Spring 2013, Summer 2014.
2. Reviewer: *American Political Science Review*, *Science*, *American Journal of Political Science*, *Political Analysis*, *Journal of Politics*, *British Journal of Political Science*, *Conflict Management and Peace Science International Organization*, *International Studies Quarterly*, *Proceedings of the National Academy of Science*, *Science*, *Public Administration Review*, *Social Networks*, *State Politics & Policy Quarterly*, *PLoS ONE*, *Policy Studies Journal*, *Political Research Quarterly*, *American Politics Research*, *Public Choice*, *Journal of Computational and Graphical Statistics*, *Journal of Machine Learning Research*, *Journal of Statistical Software*, *The Stata Journal*, *Journal of Public Policy*, National Science Foundation, Swiss National Science Foundation, National Science Center (Poland).
1. Member: American Political Science Association (sections on Political Methodology and Political Networks) and the Midwestern Political Science Association