

Mathematical Sociologist

Message from the Chair: Diane Felmlee



Greetings Mathematical Sociologists! As academics and scientists, we are facing many challenges and uncertainty today. I do not have easy solutions to our societal problems, but I do know that our work as rigorous, creative sociologists remains crucial to our discipline and the wider world. (continues on page 2)

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Let's keep tackling important questions with the unique tools of our specialty --- the use of mathematics in refining key concepts, theory development, and path-breaking, mathematical, empirical applications. The Mathematical Sociology Section connects us and helps make our work better. This issue of the *Mathematical Sociologist* will catch you up on the many ways we are connecting this year.

First, there are deadlines approaching quickly. It's time to get ready for ASA August 8-12 in the Windy City of Chicago! The deadline for submissions to present at ASA is February 26. There are many exciting sessions hosted by Math Soc, and in several cases, jointly with other Sections. One of our sessions will be the James S. Coleman Lecture, with our own Kathleen Carley as the recipient of the James S. Coleman Distinguished Career Award, presenting: "Digital Dreams: From science fiction to computational sociology." We anticipate all these sessions will bring in large audiences. Check out this newsletter for additional details about the sessions on the program for Chicago and information about the Coleman lecture. A big thank you to the organizers of these promising sessions: Matthew Brashears, Neha Gondal, David Schaefer, Xiaoling Shu, and Anna Skarpelis.

Nominations for our section awards are also on the horizon. Details about these awards appear in this newsletter and on the ASA website. The deadline for nominations is March 15. Self-nominations are encouraged and a good way to get talented colleagues to look over your work. Thank you to the Chairs of these committees, Xi Song, Natasha Quadlin, Yongren Shi, Charles Gomez, and Cassie McMillan, as well as the 20 committed members of these committees who agreed to serve in these important tasks.

In addition, the 2025 ASA Election is approaching, and our Section is well-prepared. We have an excellent slate of candidates recruited by the Nominations Committee and led by Noah Mark. We are lucky to have such a fine group of scholars on the docket! Check the newsletter for details regarding these election candidates. Thank you to the Nominations Committee, including Noah Mark (Chair), Tony Paik, David Melamed, Elizabeth Roberto, and Aidan Combs. We also extend our appreciation to the candidates for their willingness to run for these noteworthy offices.

Note, too, that the Math Soc Mentoring Program is making excellent progress in its third year. The Student and Early Career Mentor Team is reaching out to all our new student members to tell them ways that the Math Soc Section can benefit them and to help them connect with mentors in the Section. Please check the information in the recent announcement that contains details about this program. We need both students and faculty participants to make this program continue to thrive. A hearty thank you to Noah Mark for spearheading this commendable effort and to Mark Pachucki, Hannah Waight, Jimi Adams, Zack Kline, Allison Leanage, Sabrina Mai, Trent Mize, Jeffrey Shen, and Loring Thomas for their work making this program a success.

Also, be sure to check out our fabulous, updated Website <https://mathematicalsociology.wordpress.com/>. The Website includes much important information about our Section including student member profiles and a newsletter archive, and it now greatly facilitates the award nomination process for our members. Thanks to our talented Webmasters, Nicholas Harder, Zara Jillani, and Allison Leanage, for their ingenuity and effort.

There is additional information in the newsletter that you should check out that concerns our Section. It's important for us all to recognize that this newsletter entails a good deal of time and work. I extend my sincere thanks to Diego Leal and Jorge Zazueta for their dedication and effort in generating such a wonderful Spring newsletter edition. We are indeed fortunate to have them behind the keyboard.

Good luck, Section mates, with your submissions and nominations! And hold tight during these tumultuous days.

Best regards,

Diane

Mathematical Sociology at the 2025 ASA Meeting. Call for Submissions

Open Topics in Mathematical Sociology: Flash Talks Session

Session Organizers: Matthew E. Brashears (U. of South Carolina) and Neha Gondal (Boston University)

This is not your typical paper session: this is the Mathematical Sociology Flash Talk Session! Join us for multiple, brief, and snappy renditions of cutting-edge work that uses mathematics, social network analysis, and/or computational methods to advance sociological knowledge. Projects making theoretical, empirical, and/or methodological advances are all welcome for this session. Regardless of subject, we ask and expect that each presenter will do their very best to be fast, informative, and engaging! After these brief presentations, presenters will “break out” for Q&A and interaction roundtable discussions.

Advancing Mathematical and Computational Research in Social Psychology
(Jointly Sponsored with Section on Social Psychology)

Session Organizer: David R Schaefer, University of California - Irvine.

We seek papers for a joint session that extends the rich collaboration between the Mathematical Sociology and Social Psychology sections. We are specifically interested in papers that build, extend, or apply computational or mathematical models to social psychological questions. This may involve bringing new tools to investigate long-standing theoretical questions or using mathematical or computational methods to advance social psychological theory. We welcome papers across any area of social psychology and using a wide range of methods, including (but not limited to) network analysis, natural language processing, agent-based models, machine learning, and mathematical modeling.

Machine Learning and Classical Statistical Approaches: Trade-offs, Integration, and Debate
(Jointly Sponsored with Section on Methodology)

Session Organizer: Xiaoling Shu, University of California-Davis

Machine Learning is a research approach that is both inductive and deductive and plays an important complementary role in improving model goodness of fit, revealing valid and significant hidden patterns in data, identifying nonlinear and non-additive effects, providing insights into data developments, methods, and theory, and enriching scientific discovery. When the explicit model structure is unclear, and algorithms with good performance are difficult to attain, machine learning builds models and algorithms by learning and improving from data. This Section welcomes the following research that: 1) demonstrates the implications of this new paradigm to data, methods, and theory development, or 2) compares machine learning with the classical approach of parameter estimation regressions, or 3) incorporates predictive modeling to produce improved models that combine explanation and prediction.

Culture and Computational Social Science
(Jointly Sponsored with Section on Sociology of Culture)

Organizer: Anna K.M. Skarpelis, Queens College (CUNY).

This panel examines how power and epistemology influence mathematical and computational models of culture. We invite contributions on any empirical topic that highlights how authors navigated the moral and normative challenges posed by the aim of modeling culture, whether brought about by the data used, theories applied, or epistemologies. We are especially curious about creative and non-conventional uses and manipulations of data. Submissions can take various forms—STS-inspired analyses of the epistemic

assumptions in mathematical modeling, innovative methods for handling unusual or problematic data, or theoretical work addressing the normative aspects of modeling complex systems.

2025 Call for Section Award Nominations

The Mathematical Sociology Section invites nominations for five awards to be given in 2025. For all awards, nominators and nominees must be members of the Mathematical Sociology Section at the time the nomination is submitted. Self-nominations are welcome. This year, all nominations should be made via the Mathematical Sociology website: <https://mathematicalsociology.wordpress.com/section-awards/>

Award for Progress in Mathematical Sociology

Committee Chair: Xi Song (xisong@sas.upenn.edu)

This award is given annually for a discovery, technical innovation, or invention representing a significant contribution to progress in mathematical sociology. The contribution may have been made at any time prior to the award year. While this contribution will ordinarily be described in one or more publications, this award recognizes the intellectual contribution itself and not any publication arising from it. Up to three individuals may share a given award, provided that all meet the selection criteria. The committee will generate nominations and also encourage nominations from section members. Nominators and nominees must be members of the Mathematical Sociology Section. Self-nominations are welcome.

Please submit nomination letters here by March 15, 2025:

<https://mathematicalsociology.wordpress.com/section-awards/>

Harrison White Outstanding Book Award

Committee Chair: Natasha Quadlin (quadlin@soc.ucla.edu)

This award is given biennially in odd-numbered years for an outstanding book in mathematical sociology. Eligible books must have been published during the four years prior to the award year (2020-2024). Only members of the Mathematical Sociology section are eligible to be nominated or to submit nominations for this award. Self-nominations are welcome.

Please submit nomination letters here by March 15, 2025:

<https://mathematicalsociology.wordpress.com/section-awards/>

Outstanding Article Publication Award in Mathematical Sociology

Committee Chair: Yongren Shi (University of Iowa)

This award is given annually for a published article making significant contributions to mathematical sociology. Eligible papers must have a publication date during the three years before the award year, that is, in 2021-2024. Nominators and nominees must be members of the Mathematical Sociology Section at the time the nomination is submitted. Self-nominations are welcome.

Please submit nomination letters here by March 15, 2025:

<https://mathematicalsociology.wordpress.com/section-awards/>

Outstanding Graduate Student Paper Award

Committee Chair: Charles Gomez (University of Arizona)

This award is given annually for a paper that makes a significant contribution to mathematical sociology. Papers can be published or unpublished. The submission can consist of a dissertation chapter but not the entire dissertation. Eligible papers must have been written while the corresponding or first author was still a graduate student and during the three years before the award year, that is, 2021-2024. Multiple-author papers are admissible, provided that the corresponding or first author meets the eligibility requirements and no non-student is a co-first author. In the case of multi-authored papers with non-student authors, a letter from the most senior non-student author is required, which describes the student(s) contributions. Nominators and nominees must be members of the Mathematical Sociology Section at the time the nomination is submitted. Self-nominations are encouraged. On multiple-author papers including non-student authors who are Section members, the award is shared by the eligible student authors. Please submit (1) a copy of the paper, (2) a brief nomination letter describing the reasons for the nomination, and if relevant, (3) a co-authorship letter. (Faculty co-authorship letters may be sent separately in case of self-nomination; in that case, please indicate the name of the co-authorship letter writer in the nomination letter.)

Please submit nomination letters here by March 15, 2025:

<https://mathematicalsociology.wordpress.com/section-awards/>

Geoffrey Tootell Mathematical Sociology Outstanding Dissertation-in-Progress Award

Committee Chair: Cassie McMillan (Northeastern University)

This award, given annually, provides a grant of \$5,000 to meet some of the scholarly expenses of a student whose dissertation employs mathematics in an interesting, imaginative, or ingenious way to advance sociological knowledge. The applicant should submit a copy of the approved dissertation proposal, with a list of any requirements added by the graduate committee. The application packet should also include a letter of support from the student's sponsor, which describes the student's qualifications for completing the work and the potential importance of the project. Applicants must be members of the Mathematical Sociology Section and must agree to remain members through the period to be covered by the grant. Please submit a copy of the dissertation proposal and an application letter. (Letters of support may be sent separately in cases of self-nomination; please indicate the name of the letter writer in the application letter.)

Please submit nomination letters here by March 15, 2025:

<https://mathematicalsociology.wordpress.com/section-awards/>

2024 Math Soc Election Slate

Chair-elect

(1-year term begins in 2025. One person to be elected)

- ❖ Zack Almquist, University of Washington
- ❖ Lisa Walker, University of North Carolina – Charlotte

Graduate Student Representative

(1-year term, begins in 2025. One person to be elected)

- ❖ Tenshi Kawashima, University of Georgia
- ❖ Sabrina Mai, University of California – Irvine

Council Members

(3-year term, begins in 2025. Two people to be elected)

- ❖ Elizabeth Bruch, University of Michigan
- ❖ Scott Duxbury, University of North Carolina Chapel–Hill
- ❖ Charles Gomez, University of Arizona
- ❖ Xiaoling Shu, University of California – Davis

Note: Full candidate bios and other information will be on the ballot itself.

Voting starts on April 17 and runs from April 17 to May 19. Your membership in ASA and the Math Soc Section must be active from April 1 through June 1 to be eligible to vote and receive a ballot. Keep your memberships current, and be sure to renew by March 31 if your membership is set to expire before June 2nd.



Coleman Lecture: Kathleen Carley

Digital Dreams: From Science Fiction to Computational Sociology

When Asimov wrote the foundation trilogy he inspired generations of scholars to try to bring psycho-history to fruition. Today, the advances in social network analysis, artificial intelligence, and data science more broadly along with the increase in data available digitally have made this dream feasible. In this talk, advances due to thinking about networks from a high dimensional and dynamic perspective, and due to the use of techniques such as large language models are described, and their implications for understanding diffusion and social influence discussed.

Kathleen M. Carley (Ph.D. Harvard; HD University of Zurich) is a Professor at Carnegie Mellon University in the School of Computer Science’s Software and Societal Systems Department, IEEE Fellow, Director of the Center for Computational Analysis of Social and Organizational Systems (CASOS) and Director of the Center for Informed Democracy and Social Cybersecurity (IDeaS).



Other News

News by Zachary Neal (Michigan State University): A working group of the [International Network for Social Network Analysis \(INSNA\)](#) has recently published [Recommendations for Sharing Network Data and Materials](#) in the journal Network Science. The working group “recommends that network data and materials should be shared, but access to or use of shared data and materials may be restricted if necessary to avoid harm or comply with regulations. Researchers should share the network data and materials necessary to reproduce reported results via a publicly accessible repository when an associated manuscript is published. To ensure the adoption of these recommendations, network journals should require sharing, and network associations and academic institutions should reward sharing.” You can find the complete open-access paper, together with a brief overview of the recommendations and an opportunity to endorse them, at <https://www.zacharyneal.com/datasharing>.

Mission Statement

Thank you for your timely contributions to this issue of the Mathematical Sociologist. Please continue to send us your announcements, articles, book reviews, conference announcements, etc. The more you are involved with the newsletter, the better it will be. Please feel free to send us your comments, concerns, corrections, or any ideas you have for the newsletter.

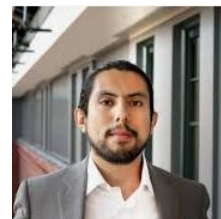
Have a great Spring semester, and watch your email for future newsletter editor requests!

Newsletter Co-editors



Jorge Zazueta

jorge.zazueta@uaslp.mx



Diego F. Leal

dflc@arizona.edu

Mission Statement of the Mathematical Sociology Section

The purpose of the Mathematical Sociology Section of the American Sociological Association is to encourage, enhance, and foster research, teaching, and other professional activities in mathematical sociology for the development of sociology and the benefit of society through organized meetings, conferences, newsletters, publications, awards, and other means deemed appropriate by the Section Council. In addition, the Section seeks to promote communication, collaboration, and consultation among scholars in sociology in general, mathematical sociology, and allied scientific disciplines.