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Mathematical Sociologist

VOLUME 15, ISSUE 2

SPRING 2012

Greetings from the Chair...Katherine Faust



The spring newsletter gives me the welcome opportunity not only to communicate the latest section news, but also to reflect on the state and future of mathematical sociology more generally. In both cases, I believe news is encouraging and points to a robust future for the section and the discipline.

The section has been active this year – planning continues both for section activities at the ASA meetings in Denver (more elsewhere in the newsletter) and for the Fifth Joint Japan-North America Mathematical Sociology Conference (to be held in Denver prior to the ASAs).

The two section paper sessions at ASAs reflect my sense of fruitful directions for mathematical sociology. One session focuses on model assessment and the other on empirical applications. As *mathematical sociologists*, our signature contributions are formal models for social structure and process, but those contributions are only as solid as the models are robust. Fragile models do not provide a

good foundation for moving forward. And, as *sociologists*, our models must be grounded in empirical evidence. Models completely detached from reality don't do much to advance our understanding of the social world. Many thanks to Carter Butts for organizing both ASA Math. Soc. paper sessions this year!

Also looking to the future, Mathematical Sociology Council (with the encouragement of Geoff Tootell) voted overwhelmingly to increase the amount of the Dissertation in Progress Award from \$1000 to \$1500. This increase sustains our commitment having the award make a meaningful difference in the career of a young mathematical sociologist. The award committee is currently deliberating, and this year's recipient will be announced in August.

With regard to prospects for mathematical sociology, I largely view this through my (rosy) lens of social networks. Social network research currently makes up a large portion of

mathematical sociology, though this has not always been true, nor will it necessarily be so in the future. What is true is that opportunities abound for people who can bring together a keen sense of social organization with formal skills for modeling and understanding social data (to continue my earlier theme on models and

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empirical evidence). Technological advances have put astounding computational capabilities at most of our fingertips, and technological advances are also bringing mind-boggling amounts social data within reach (need I say “twitter”?). What a great playground for mathematical sociologists! However, to push the playground analogy a bit, we need to make sure that the “big kids” from other disciplines don’t hog all of the good toys. Mathematical sociologists have the insights and formal dexterity to make the most of this confluence of opportunities by developing robust social models for large scale social observations. Such advances can go a long way to-

ward developing social insights for the 21st Century.

So, on many fronts I am optimistic about the future of mathematical sociology – we have a bumper crop of students as members of the section (25.7%), Ph.D.’s with formal skills place well in the discipline, and intellectual opportunities abound. That said, we should continue to recruit new members, encourage students to join the section (consider subsidizing their section dues), and colonize new research frontiers. Onward!

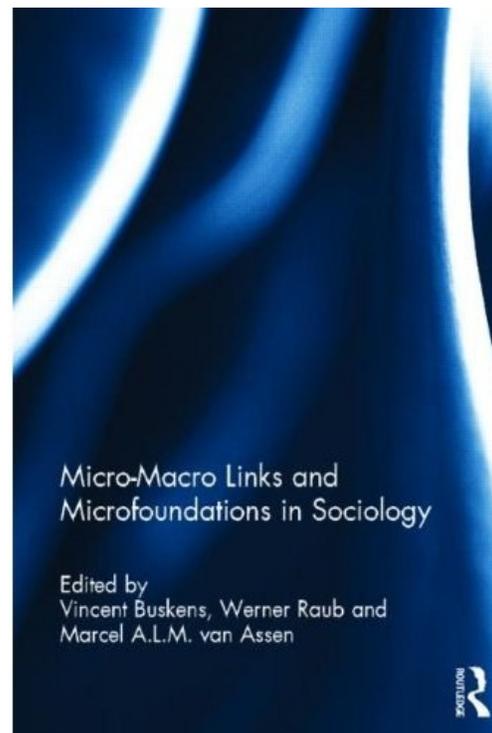
I look forward to seeing everyone in Denver!

Katie Faust

You might remember the special issue "Micro-Macro Links and Microfoundations" of *Journal of Mathematical Sociology*.

Routledge has re-edited the special issue as a book:

Buskens, Vincent, Werner Raub & Marcel van Assen (eds.) Micro-Macro Links and Microfoundations. London: Routledge 2012.



<http://www.routledge.com/books/details/9780415698979/>

<http://www.amazon.com/Micro-Macro-Microfoundations-Sociology-Vincent-Buskens/dp/0415698979>



Journal of Mathematical Sociology
Volume 35, Issue 4,
2011

“The Cultural Evolution of Indiscriminate Altruism in a Large Randomly Matching Population” by Noah P. Mark – pages 235-248

“Coordination in Dynamic Social Networks Under Heterogeneity” by Michał & Vincent Buskens – pages 249-286

“Recovering Social Networks from Individual Attributes” by Arnold Polanski & Duncan McVicar – pages 287-311

Journal of Mathematical Sociology
Volume 36, Issue 1, 2012

“Individual Strategy Update and Emergence of Cooperation in Social Networks” by Carlos P. Roca, Angel Sánchez & José A. Cuesta – pages 1-21

“SEM Modeling with Singular Moment Matrices Part II: ML-Estimation of Sampled Stochastic Differential Equations” by Hermann Singer – pages 22-43

“Optimality in Social Choice” by Gennaro Amendola & Simona Settepanella – pages 44-77

*Check out
 these recent
 publications in
 Mathematical
 Sociology!!*

New from Phillip Bonacich and Philip Lu

Introduction to Mathematical Sociology

Mathematical models and computer simulations of complex social systems have become everyday tools in sociology. Yet until now, students had no up-to-date textbook from which to learn these techniques. *Introduction to Mathematical Sociology* fills this gap, providing undergraduates with a comprehensive, self-contained primer on the mathematical tools and applications that sociologists use to understand social behavior.

Phillip Bonacich and Philip Lu cover all the essential mathematics, including linear algebra, graph theory, set theory, game theory, and probability. They show how to apply these mathematical tools to demography; patterns of power, influence, and friendship in social networks; Markov chains; the evolution and stability of cooperation in human groups; chaotic and complex systems; and more.

Introduction to Mathematical Sociology also features numerous exercises throughout, and is accompanied by easy-to-use Mathematica-based computer simulations that students can use to examine the effects of changing parameters on model behavior.

- Provides an up-to-date and self-contained introduction to mathematical sociology
- Explains essential mathematical tools and their applications
- Includes numerous exercises throughout
- Features easy-to-use computer simulations to help students master concepts

"A first-rate introduction. The coverage is exemplary, starting with basic math techniques and progressing to models that incorporate a number of these techniques. Chapters on evolutionary game theory, cooperative games, and chaos are significantly innovative, as is the incorporation of simulations. This book brings mathematics to life for students who may entertain doubts about the role of math in sociology."--Peter Abell, professor emeritus, London School of Economics and Political Science

"This book provides a concise and up-to-date introduction to mathematical sociology and social network analysis. It presents a solid platform for engaging undergraduates in mathematical approaches to sociological inquiry, and includes Mathematica modules with which students can explore the properties and implications of a variety of formal models. I plan on using it in my courses on social networks."--Noah E. Friedkin, coauthor of *Social Influence Network Theory: A Sociological Examination of Small Group Dynamics*

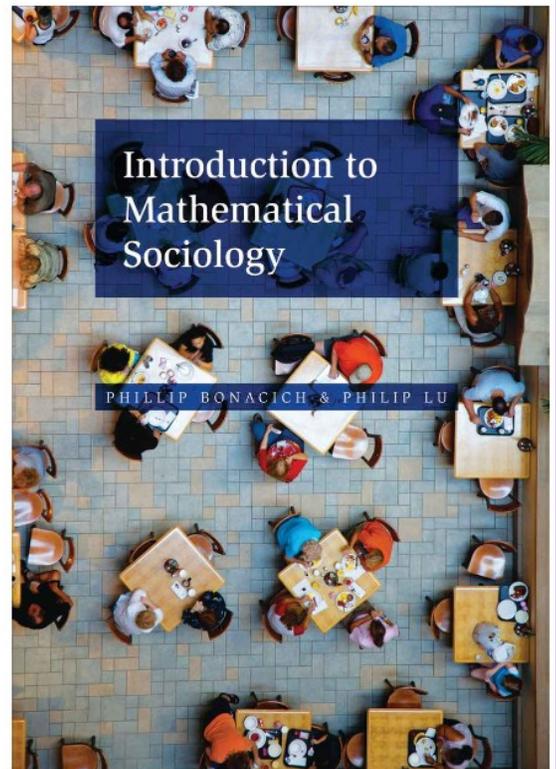


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Also available for Kindle® at Amazon.com

http://www.amazon.com/Introduction-Mathematical-Sociology-Phillip-Bonacich/dp/0691145490/ref=sr_1_1?ie=UTF8&qid=1333243843&sr=8-1

The 5th Joint Japan-North America Mathematical So- ciology Conference

Call for Abstracts

Deadline for submission: May 6, 2012

Venue: Colorado Convention Center & Hyatt Regency, Denver, Colorado

Date: August 16, 2012

The conference focuses on advancement of mathematical sociology world-wide and fosters friendship among those whose work is on mathematical sociology in all countries. Any papers on mathematical sociology from authors in any discipline and in any country are welcome.

Abstracts with less than 300 words should be submitted for consideration to Yoshimichi Sato (ysato@sal.tohoku.ac.jp) and Sun-Ki Chai (sunki@hawaii.edu) by May 6, 2012. Any inquiries should be addressed to the co-organizers.

24th Group Processes

Thursday, August 16, 2012 from 8:00 - 5:00
Denver, Colorado

The organizers are excited about what their plans for this year - including paying tribute to the work and legacy of Bernie Cohen and a special session focused on applications of theories of group processes to understanding generosity.

Early registration ends **April 30, 2012.**

Finally, this conference relies heavily on word of mouth. It is from folks like you that a student or a colleague learns of the supportive group processes community and about this relatively small forum that allows for a productive exchange of ideas. In that spirit, please pass this information along to others who you think would be interested in joining us.

If you have any questions, please contact one of the organizers:

Jessica Collett, University of Notre Dame: jcollett@nd.edu

D'Lane Compton, University of New Orleans: dcompton@uno.edu

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David Schaefer, Arizona State University: david.schaefer@asu.edu

<http://www.asu.edu/clas/ssfd/gp2012/>



Emancipatory Projects,
Institutional Designs,
Possible Futures

August 17-20 • Denver, Colorado
Colorado Convention Center & Hyatt Regency

ASA 2012

Information & Updates

Program Schedule announced **April 30, 2012**

All program participants must preregister by **May 11, 2012.**

Track the Status of Your Paper Submission.

ASA Housing Reservations is now open.

<http://www.asanet.org/AM2012/index.cfm>

Denver Attractions

16th Street Mall - Pedestrian Mall

Lined with 200 trees and 50,000 flowers, this festive, mile-long pedestrian promenade has 28 outdoor cafes and offers Denver's best people-watching. I.M. Pei designed the gray and pink granite pathway to resemble the pattern of a diamondback rattlesnake.

Hop on the bus – they're free and stop on every corner. After dark, horse-drawn carriages clatter up and down the Mall.

<http://www.denver.org/what-to-do/shopping/detail?memid=2435&k=16th&wc=Shop>



Check out www.denver.org/
for more information about
Denver.

If you can find the time in your busy conference schedule, check out a local Denver Attraction...

Must See Denver Attractions

Denver Art Museum

www.denverartmuseum.org

There are two buildings – one a fortress-like structure from Italian architect Gio Ponti, the other, a structure that resembles a titanium crystal with peaks and shards designed by Daniel Libeskind. Inside, find the world's greatest collection of Native American art and 68,000 other art objects, including works from European masters, and Old West classics .



Denver Museum of Nature & Science

www.dmns.org

The fourth largest museum in the U.S. is a maze filled with treasures of the earth – dinosaurs, dioramas, space exhibits, science experiments, a digital planetarium, IMAX theatre and touring shows.

Denver Botanic Gardens

www.denverbotanicgardens.org

This 23-acre oasis in the middle of the city has 45 different gardens (some 33,000 plants), as well as one of the nation's top 10 conservatories. Relax in the Japanese Garden, climb through the Rock Alpine Garden and explore the new Mor-decai Children's Garden





Thank you for your timely contributions to the Spring 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 and watch your email for future newsletter

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Mission

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. The Section seeks to promote communi-

Statement of the Mathematical



Site for the 2012 Annual Meeting of the American Sociological Association,

Colorado Convention Center

cation, collaboration and consultation among scholars in sociology in general, mathematical sociology and allied scientific disciplines.

Archimedes Quoted in D MacHale

There are things which seem incredible to most men who have not studied mathematics.