

The Mathematical Sociologist

Newsletter of the Mathematical Sociology
Section of the American Sociological Association

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From the Newsletter Editor

Barbara Meeker

In this Fall/Winter 2004 issue you will find a copy of Past Chair David Heise's annual report (including minutes of the council and business meetings, from Secretary/Treasurer Lisa Troyer) and information about what the section plans for 2005. This includes new committees, plans for the ASA program, calls for papers for several conferences, and an update on the Dissertation Grant Fund.

Continuing discussion from previous issues about teaching of mathematical sociology and/or mathematical content in sociology, there are two responses to my request for comments on this topic.

As usual, you are also reminded to renew membership and encourage others to join the section. All of the officers and committee members deserve a vote of thanks for their efforts. To all of you, a happy holiday season and the very best for the next year.

From the Section Chair

Kenneth C. Land

We had good levels of participation in the Mathematical Sociology sessions and Section Business Meeting at the 2004 Annual Meeting of the ASA in San Francisco. It now is time to organize our Section activities for the 2004-05 year and to prepare for Section activities at the 2005 Annual Meeting in Philadelphia.

Important activities of the Section are conducted during the year by its Committees. We specifically need to organize committees on Nominations (David Heise, Past Section Chair and members of the Council already have begun the work of this committee), Outstanding Book Award, Outstanding Article Publication Award, Graduate Student Paper Award, and 2005 Section Program.

I hereby am asking the following Council and Section members to serve on these committees.

MathSoc Section Committees 2005

Nominations Committee:

Chair: David Heise

All Council Members are members of this committee.

Outstanding Book Award (to be named the Harrison White Outstanding Book Award when the ASA sends out the change for membership approval):

Chair: Murray Webster, Jr.
Noah E. Friedkin
Ju-Sung Lee

Two non-Council members selected by Murray Webster.

Outstanding Article Publication Award:

Chair: Bob Hanneman
Diane H. Felmlee
Lisa Troyer

Two non-Council members selected by Bob Hanneman.

Graduate Student Paper Award:

Chair: Noah P. Mark
James Montgomery
James Moody

Two non-Council Members selected by Noah Mark.

2005 Section Program

The 2005 Section Program Committee consists of Chair: Ken Land and all Council members. Our plans are as follows: John Skvoretz will organize and preside over the Section's ASA-allotted session at the 2005 meetings; and the one hour time slot that normally is allocated for the Section Council Meeting will be set aside for another substantive session with Tom Fararo presiding. The theme of these sessions will be MATHEMATICAL SOCIOLOGY TODAY: CURRENT STATE AND PROSPECTS. Skvoretz and Land will invite panel members to participate in each of these two sessions, with follow-up discussions among the panelists and audience members.

Skvoretz also will work with the person designated by the ASA as organizer of the regular session on Mathematical Sociology to accommodate as many submitted papers as possible. We encourage your submissions. If a sufficient number of good quality submissions are received, it may be possible to have more than one regular session on Mathematical Sociology. [Editor's note: ASA has now announced the regular sessions – see note below]

Conferences in 2005

Sunbelt Social Network Meeting Redondo Beach, CA, February 16-20, 2005

Here is the web address for an announcement for the next Sunbelt Social Network meeting, in February, 2005.

<http://www.socsci.uci.edu/%7Essnconf/> For further information, contact

Phillip Bonacich
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University of California
Los Angeles, CA 90095
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E-mail: bonacich@soc.ucla.edu

Sapporo Conference June 24-26, 2005 Sapporo, Japan

Call for Papers. Third Joint Conference on Mathematical Sociology, Hokkaido University, Sapporo, Japan. Cosponsored by the Mathematical Section of the American Sociological Association and the Japanese Association for Mathematical Sociology. Abstracts submitted before January 15, 2005, will be given special consideration. Early submitters will be notified of the decisions of the organizers by February 15, 2005. Abstracts submitted later than March 15, 2005 will be accepted only if program space is available. For information on the conference, or inquiries on possible scholarly Contributions, contact the American organizer, Herm Smith, at hwsmith@umsl.edu, or the Japanese organizer, Dai Nomiya, at nqb03710@nifty.com. The conference Web page is:

www.geocities.jp/rcusjapan/

ASA Annual Meeting Philadelphia, PA, August 13 – 16 2005.

Regular Session on Mathematical Sociology, organized by Adrian Hayes, Johns Hopkins University, Adrian_hayes@yahoo.com
To submit papers, use the ASA on-line system, www.asanet.org/convention/2005/callhowto.html
The deadline for submission is January 18, 2005.

Teaching Mathematical Sociology

[From the editor: In response to my request for information about classes, courses and curriculum materials for Mathematical Sociology, I received the following two very interesting comments. I have also taken the liberty of listing Phil Bonacich's Web page below under 'Contacts'; as Montgomery notes, Phil has been a pioneer in this area]

From **James A. Kitts**, University of Washington, <http://faculty.washington.edu/kitts/>
"In cooperation w/ NSF and ASA, I'm collecting materials on teaching formal modeling (particularly computational modeling) in Sociology. NSF/ASA will be distributing the materials and I will be organizing two upcoming ASA sessions on the topic, in 2005 and 2006. A brief abstract on the project:

<http://www.nsf.gov/awardsearch/showAward.do?AwardNumber=0433086>”

From **James Montgomery**, University of Wisconsin – Madison

“I've been teaching an undergraduate mathematical sociology course for the past four years. The syllabus is posted on my website: www.ssc.wisc.edu/~jmontgom/. The course focuses mostly on sociological applications of matrix algebra (with small forays into graph theory and abstract algebra), and students make extensive use of the software package Matlab on problem sets. For readings, I use copies of the (unfortunately out-of-print) book *Matrices and Society* by Bradley and Meek, along with the manuscript posted on Phil Bonacich's website (thank you, Phil!), supplemented with the additional readings listed on the syllabus. Given initial concerns (from my department chair) that there would be little demand, I have been happy to find that I can dependably fill the course with undergrads from engineering, mathematics, and computer science. The CS students, in particular, have been delightful: they are already fluent in discrete mathematics and often eager to learn about sociological applications. (Social network analysts will appreciate that the mathematics of "structure" is the same whether you're analyzing data structures or social structures.) And the course usually attracts two or three quantitatively-inclined sociology grad students each year. So especially for other mathematical sociologists teaching in universities where CS undergrads need to satisfy social-science requirements, I'd encourage you to consider this type of course.”

Dissertation Grant Fund Developing

The Mathematical Sociology Section business meeting in San Francisco agreed to pursue establishing a fund for the purpose of awarding a dissertation grant to a student or students whose work exemplifies the application of mathematical principles in sociology. An Ad Hoc Committee for a Dissertation Grant Program has been set up, consisting of Geoffrey Toottell (Chair), Alison Bianchi, Phil Bonacich, Willie Jasso, Barbara Meeker, Bob Shelly, Lisa Troyer, and Murray Webster.

Goeff and Bob have established a mechanism through the American Sociological Association to accomplish this goal. The fund will be held in trust by the Association and its income used each year to award a grant or grants to deserving students.

As a result of a generous donation some years ago, the Section has a start on this project of nearly \$4,500. The committee will seek donations from Section members to increase this to an endowment of approximately \$20,000. This would allow an award about \$1,000 per year in the grant. A donation, and/or a pledge for donations to be paid over the next three years should be sent to **Professor Robert Shelly, Department of Sociology and Anthropology, Bentley Hall Annex, Ohio University, Athens, Ohio 45701. Checks should be made out to the American Sociological Association, with the following on the note line: "MSS Dissertation Grand Fund."**

Once the program is funded the Committee will identify a mechanism to review applications and fund student(s) in their work. More information from this Committee will be circulated to the Section members soon.

Please consider this project as you make your end-of-year contributions.

Remember to renew your membership, and to encourage colleagues and students to join our Section. Go to ASA page

<http://www.asanet.org/members/membership.html>. Or use the form at the end of the Newsletter. You must be a member of ASA to join a Section.

Contacts

Web Page: Frans N. Stokman, Professor of Social Science Research Methodology at the University of Groningen, The Netherlands
<http://www.oprit.rug.nl/stokman/>

Web Page: Phil Bonacich, UCLA
<http://www.sscnet.ucla.edu/soc/faculty/bonacich/home.htm>

Web Page: Barbara Meeker, University of Maryland
<http://www.bsos.umd.edu/socy/meeker/>

New Book: Patrick Doreian, Vladimir Batagelj, Anuska Ferligoj *Generalized Blockmodeling*, Cambridge University Press, August 2004 408 pages 103 line diagrams 117 tables Hardback
ISBN:0521840856 | ISBN13:9780521840859 **\$80.00**
<http://us.cambridge.org/titles/catalogue.asp?isbn=0521840856>

[Editor's note: this is the report submitted by David Heise to ASA for the year 2004. It includes minutes of the business and council meetings. I have not included the various PDF attachments mentioned; I hope we can have them on our Web Page eventually]

Mathematical Sociology Annual Report 2003-4
David R. Heise, Past-Chair October 14, 2004

In the past year the Section on Mathematical Sociology revealed its vigor and esprit de corps in several ways.

- We co-sponsored a mini-conference with the Rationality and Society Section.
- We continued preparations for a conference on mathematical sociology- in Japan.
- We began committee work to establish a fund for a national fellowship in mathematical sociology.
- We gave awards for a distinguished career and for outstanding publications.
- We began documenting the Section's history.
- We published three issues of our Section newsletter.

These matters are elaborated in sections below.

Report of the 2003 Business Meeting of the Mathematical Sociology Section (37) August 15, 2004 (Prepared by Lisa Troyer)

The Business Meeting was called to order at 2:31 PM. Fifty-two members of the Mathematical Sociology Section attended the Business Meeting.

1. Election Results

Section Chair, David Heise, announced the results of the Mathematical Sociology Section Chair and Council elections. Scott Feld is the Chair Elect; Carter Butts and Ron Breiger are the new Council Members; Casey Borch is the new Student Council Member.

2. Budget Report

Lisa Troyer's budget report was presented to the membership (see Attachment A). The section began the year with \$1,430. The Section's budget allocation from the American Sociological Association (based on the Section membership in

the first quarter of 2004) was \$392, bringing the Section's balance to \$1,822. The Section did not hold a reception this year because the reception would have been scheduled the day before the business meeting (when it could be announced), which would likely lead to poor attendance. Because of this, David Heise, in consultation with the Council, decided not to hold a reception at the 2004 meeting. Consequently, Troyer anticipates that additional expenditures will be minimal (e.g., some copying costs, costs of plaques given as awards).

Troyer also reported on transactions and growth in funds resulting from Geoffrey Tootell's gift to the section of 20 shares of Microsoft stock in 1998 (see Attachment A). The initial value of the stock in 1998 was \$2,835. The stock split in 1999 (2-for-1) and was sold in 2000. The funds from the sale were invested in a money market account, which was valued at \$4,414 as of January 31, 2004.

Tootell encouraged the Section membership to take action to enlarge the fund and noted Heise's idea to use the fund to establish a Mathematical Sociology Dissertation Fellowship. Such use of the funds would be a good mechanism to both recruit new scholars to the ranks of mathematical sociologists and help start the careers of talented mathematical sociologists. Heise asked Tootell to chair a committee that would investigate the use of the fund in such a way as well as explore ways to further enlarge the fund. Tootell accepted this charge.

(Further details concerning the Section's budget are included in Lisa Troyer's attached report: Budget&Members 2004.PDF.)

3. Membership Report

Troyer presented the membership report to the Section. The membership totaled 167, as of 6/22/2004. Last year it was at 165 at about the same point, but jumped to 196 by the first-quarter of 2004 (the point at which the American Sociological Association makes section budget allocations based on the sections' memberships). Troyer noted that such a large jump (31 new members) was unusual and that in the past, the Section has only picked up about 5 -7 new members between June and the first quarter. She indicated that Robert Shelly, who had agreed to chair an ad-hoc membership committee to investigate

strategies for increasing the membership, had taken some action last year that appeared to have been effective.

Shelly noted that he had implemented several strategies, including:

- Contacting members of the Rationality & Society Section (whose interests are likely to overlap with or complement mathematical sociology--) and encouraging them to also join the Mathematical Sociology' Section
- Reminding people to renew
- Encouraging members to recruit new students to join

Shelly encouraged the membership to remind colleagues to renew and again recruit new students (as well as new colleagues). The American Sociological Association will count the membership for official records (including budget allocations) on 9/30/2004. Consequently, renewals and new members up to that date will be counted.

In addition, Shelly encouraged the members of the Mathematical Sociology Section to join the International Sociological Association (ISA). The next meeting of the ISA is in 2006. Membership dues are relatively modest when considered at an annual cost, but Shelly noted that the ISA did require members to pay four years of dues at once. David Willer noted that ISA membership is free for those over 65 years of age.

(Further details concerning the Section's membership are included in Lisa Troyer's attached report: Budget&Members 2004]

4. Communications

David Heise commended Barbara Meeker's work as the Section's Newsletter Editor, noting that, "She has done a spectacular job, for which the Section is grateful." Meeker agreed to continue as Editor for at least one more year. She anticipates two issues and a summer supplement regarding the Annual Meeting of the American Sociological Association. She encouraged members to send information and article ideas to her. Also, she requested that

members with Web pages containing information or links relevant to mathematical sociology to send them to her, as she plans to include this information in the newsletter. Jun Kobayashi has been working the Section's Web site. It will contain the Section purpose, officers, conferences, by-laws, and newsletters. The site is currently residing on a server to which Kobayashi has access, but now must be migrated to the American Sociological Association's Web server. This migration should occur in a few weeks. Kobayashi also noted that he will be sending an e-mail to the Section members requesting information to enhance the Web site.

Kenneth Land, the Section's incoming chair, introduced Welmoed Spahr, Social Science Publishing Editor of Springer Publishing Company. Spahr encouraged Section members to submit manuscripts. She also noted that Quality and Quantity, a journal that mostly publishes work by European scientists is seeking submissions from and editorial participation by U.S. authors. Access to the journal is available through Kluwer-Online (to which many institutions subscribe). Kobayashi suggested that he could add a link to the Section's Web site.

5. Joint Meetings with Other Associations

David Heise reminded Section members that the joint mini-conference sponsored by the Mathematical Sociology Section and Rationality & Society Section would be held on Wednesday (8/18/2004). He distributed the program to Section members and encouraged their participation. Tootell noted that this would be a good opportunity to continue to recruit members of the Rationality & Society Section who are not already members of the Mathematical Sociology Section to join the Section.

Herm Smith reminded the Section about the Mathematical Sociology Section and Japanese Mathematical Association Third Joint Conference in Sapporo, Japan (Hokkaido University), June 24 -26, 2005. The First Joint Conference was held in Honolulu; the Second Joint Conference was held in Vancouver. Generally, the Joint Conference is held every two years. The SARS outbreak, however, delayed the scheduling of the Third Joint Conference. Professor Toshio Yamagishi at

Hokkaido University has arranged for campus housing for conference participants. Also, Japan's Ministry of Education is providing funds to help subsidize the conference. As a result, it is expected that the costs will be lower than they were for the Honolulu conference. Additionally, Smith noted that high-quality internet and presentation technology would be available at the conference.

Smith noted that Pat White, Sociology Program Director for the National Science Foundation, has agreed to fund graduate student travel grants to help students attend the conference. She has agreed to provide these grants every three years, rather than every two years. Smith noted that this might motivate holding the conference every three years, instead of every two years. Smith indicated that he will request funding to support ten graduate student travel grants for the Third Joint Conference. Section members should watch the newsletter for further information and announcements regarding the conference. There is also a Web site for the Joint Conference: [http://www. geocities. jp/rcusjapan/](http://www.geocities.jp/rcusjapan/)

Ryuhei Tsuji, a member of the Japanese Organizing Committee also commented on the Conference plans. He noted that they have received about \$30,000 for the conference from the Japanese Society for Science. He estimated that it will cost between \$1,300-\$2,000 to attend the conference (in terms of travel from the U.S., accommodations, food). He also noted that the conference will be occurring at the beginning of sightseeing season, a particularly beautiful time of year in the Sapporo area.

6. Award Presentations

David Heise noted that in the 2003 Business Meeting, the Section had decided to add its provisional awards policies to the Section's by-laws. These changes in the Section's by-laws were submitted to the American Sociological Association for a vote by the Section membership, as required for a by-law change. The American Sociological Association, however, erred and did not put the by-law-change on the section ballot in the spring of 2004. Since the error was made at the central office, the American Sociological Association promised to send Section members a separate ballot at the American Sociological Association's expense. The special ballot had

not been sent by the time of the Business Meeting.

Heise turned the floor over to Kenneth Land, chair of the Graduate Student Paper Award Committee. Land thanked committee members Robert Hanneman and Troyer. He announced that winners of the 2004 Graduate Student Paper Award are Arnout van de Rijt and Robert Willer, both of Cornell University, Department of Sociology, for their paper, "Metanetworks: A Factor in Structural Change." Land praised the paper's contribution to research on how patterns of connections among social actors change over time, noting the paper's highly innovative and technically advanced approach to the formal analysis of network dynamics. van de Rijt and Willer were present to accept the award.

Next, James Montgomery and Murray Webster presented the Mathematical Sociology Section's 2004 Outstanding Article award. The winners for 2004 are James Moody (The Ohio State University) and Douglas White (University of California- Irvine) for their article, Structural Cohesion and Embeddedness: A Hierarchical Concept of Social Groups, published in *American Sociological Review*, 68(1), February 2003. The paper develops a new graph theoretic treatment of structural cohesion based on node connectivity, capturing the intuition that more cohesive groups should better survive member losses. By offering more precise and formal conceptualizations of "solidarity" and "embeddedness," Moody and White demonstrate the value of mathematical sociology.

Diane Felmlee thanked the members of the Distinguished Career Award Committee, Noah Mark, Barbara Meeker, David Greenberg, and James Moody. She presented the 2004 Distinguished Career Award to Thomas Fararo, Distinguished Service Professor of Sociology at the University of Pittsburgh.

She provided a brief synopsis of Fararo's distinguished career and accomplishments, noting the intellectual influence he has had on sociology through his own research and writing, collaborations, mentoring, and his leadership in helping to found the Section on Mathematical Sociology. Fararo accepted the award, acknowledging several colleagues and students who had influenced his career. It was noted that it at future presentations of the

award, some time should be set aside for a formal address.

7. New Chair

Kenneth Land was welcomed as the new Chair of the Mathematical Sociology Section. Land thanked the section for electing him and encouraged members to send him ideas to enhance and vitalize the Section. He also noted some ideas that had already occurred to him. For instance, he suggested that the Membership Chair might recruit at Regular Sessions on Mathematical Sociology during the Annual Meeting of the American Sociological Association. This idea occurred to him when he noticed how full a session organized by Eugene Johnsen was. Also, he noted that the first half of the two-hour session set aside for the Population Section's business meeting was used for roundtables. It occurred to Land that the Mathematical Sociology Section might use part of its business meeting time for substantive discussions (e.g., a panel discussion on the dimensions and parameters of mathematical sociology). Land also noted that next year was the 100th Annual Meeting of the American Sociological Association and that the Section should aim for high attendance and turnout at sessions.

The Business Meeting was adjourned at 3:21 PM.

Report of the Section Council Meeting

1. Election Results. Results of the Mathematical Sociology Chair and Council Elections were announced.

2. Section Awards. Winners of the Mathematical Sociology Section Awards were announced.

3. Communications. Discussion focused on progress, and lack of progress, regarding the Section's Web site. The webmaster, Jun Kobayachi, took some actions to move the site from the UCLA server to the American Sociological Association's server, but the site still was unavailable and non-current at the time of the meeting. It was decided to continue Jun Kobayachi as webmaster despite the slow progress, since a bout of poor health had interfered with his work.

4. Third Joint Conference on Mathematical Sociology. There was an update on the status of the Joint Conference on Mathematical Sociology, co-sponsored by the Mathematical Sociology Section

of the ASA and the Japanese Association for Mathematical Sociology.

5. Bylaws Amendment on Awards Policy. Amendment of the Section's bylaws dealing with our awards policy was discussed. As noted in the report on the Business Meeting, the amendment was submitted to the American Sociological Association to place on a ballot, but that was not done. David Heise suggested that the new chair exert pressure on the Director of Governance and Sections at the American Sociological Association in order to get this function accomplished. The amendment to be put before the membership is included with this report as an attachment

6. Budget Report. Lisa Troyer's budget report was presented and accepted.

7. Membership Report. Lisa Troyer's membership report was presented. Strategies for increasing membership were discussed.

8. Mini-Conference with Rationality and Society. David Heise reminded attendees that mini-conference with Rationality and Society would be held a few days later.

9. New Chair. Kenneth Land was welcomed as the new Chair of the Mathematical Sociology Section.

Recent Section Activities

- David Heise began archiving the Section's history in cooperation with founders, past chairs, and the newsletter editor. Details are in an attachment with this report (Section History. PDF).
- Geoffrey Tootell and David Heise discussed creating a fellowship fund to support U.S.A. graduate students preparing dissertations in mathematical sociology. Geoffrey Tootell's gift to the section, now appreciated to \$4,414, represents a significant start.
- The Section co-sponsored a mini-conference with the Rationality and Society Section. The announcement and final program for the conference are included as attachments with this report (MiniConferenceAnnounce.PDF and MiniConferenceProgram. PDF).

Plans for 2004 -2005

- The Third U. S. -Japan Joint Conference on Mathematical Sociology, co-sponsored by the Mathematical Sociology Section and the Japanese Association of Mathematical Sociology will take place June 24 -26, 2005 at Hokkaido University, Sapporo, Japan. Papers currently are being selected by the organizers, Herm Smith, at hwsmith@umsl.edu; Dai Nomiya at d – nomiya@sophia.ac.jp, and Rvuhei Tsuji at rtsuji@psy.meijigakuin.ac.jp. A conference Web Site is under construction. The announcement of the conference is included as an attachment with this report (Sapporo ConferenceAnnounce.pdf).

- Geoffrey Tootell is chair of a committee to establish mathematical sociology fellowships for graduate students preparing dissertations related to mathematical sociology. The committee will define provisional regulations for awarding the fellowships, sensible investment strategies and fund-raising programs.
- Kenneth Land will investigate the options for inserting round table discussions into a part of the Section's allotted time for Council and Business meetings.
- The Section web site will be moved to the ASA server and brought up to date.

Newsletters and Other Attachments

Three issues of the section's newsletter, *The Mathematical Sociologist* were published in the past year. These are included as attachments to this report:

The Mathematical Sociologist Spr04.pdf
 TheMathematicalSociologist Sum04.pdf
 TheMathematicalSociologist Win03.pdf

Other attachments mentioned in this report are the following: AwardsPolicyForVote. PD F
 Budget& Members 2004.PDF
 MiniConfAnnounce.pdf
 MiniConferenceProgram. PD F
 SapporoConferenceAnnounce.pdf Section History.PDF

Application for Membership in the ASA Mathematical Sociology Section

Name:

Address:

____ I am an ASA member and want to join the Mathematical Sociology Section. Enclosed is a check for \$10.00 for section dues (\$5.00 for students). Make checks payable to the American Sociological Association.

____ I am not an ASA member but am interested in joining the Mathematical Sociology Section.

Please send me information about joining ASA.

Send to:
 American Sociological Association
 1307 New York Avenue, NW
 Suite 700
 Washington, DC 20005