

4th Annual Political Networks Conference and Workshops

June 14-18, 2011

Hosted by the Gerald R. Ford School of Public Policy
University of Michigan

Preliminary Program

Tuesday, June 14 – Beginning Workshop on Network Analysis (assumes no prior training)

8:30am-9:00am..... Breakfast Provided
9:00am-10:30am..... Training (Module 1)
10:30am-10:45am..... Break with Snacks
10:45am-12:00pm..... Training (Module 1)
12:00pm-1:30pm..... Lunch Provided
1:30pm-3:00pm..... Training (Module 1)
3:00pm-3:15pm..... Break with Snacks
3:15pm-4:45pm..... Training (Module 1)

Wednesday, June 15 – Computer Applications in Network Analysis (assumes prior training)

8:30am-9:00 am Breakfast Provided
9:00am-10:30am..... Training (Modules 2a and 2b)
10:30am-10:45am..... Break with Snacks
10:45am-12:00pm..... Training (Modules 2a and 2b)
12:00pm-1:30pm..... Lunch Provided
1:30pm-3:00pm..... Training (Module 2a and 2b)
3:00pm-3:15pm..... Break with Snacks
3:15pm-4:45pm..... Training (Module 2a and 2b)
5:15pm-7:30pm Optional: Canoe Trip (Gallup Canoe Livery, \$22 per canoe/kayak)

Thursday, June 16 – Specialized Workshops in Network Analysis (open to all levels)

8:30am-9:00 am Breakfast Provided
9:00am-10:30am..... Training (Modules 3a, 3c, and 3d)
10:30am-10:45am..... Break with Snacks
10:45am-12:00pm..... Training (Modules 3a, 3c, and 3d)
12:00pm-1:30pm..... Lunch Provided
1:30pm-3:00pm..... Training (Modules 3b, 3e, and 3f)
3:00pm-3:15pm..... Break with Snacks
3:15pm-4:45pm..... Training (Modules 3b, 3e, and 3f)
5:00pm-6:00pm..... Keynote Address by Garry Robins
6:00pm-7:00pm..... Post Keynote Reception with Hor Dourves

Friday, June 17 -- Conference

8:30am-9:00 am Breakfast Provided
9:00am-10:30 am Panel Paper Presentations

Friday, June 17 – Conference – Continued

10:30am-11:00am..... Break with Snacks
11:00am -12:30pm Panel Paper Presentations
12:45pm-2:15pm..... Mentoring Lunch – Michigan Union Anderson Room
2:30pm-4:30pm Panel Paper Presentations
4:30pm-4:45pm Break with Snacks
4:45pm-5:45pm Plenary Address, Mark Newman
5:45pm-6:00pm Set up Posters – Michigan Union Regal Ballroom
6:00pm-8:00pm Poster Session / Pizza Served – Michigan Union Regal Ballroom

Saturday, June 18 – Conference

8:30am-9:00am Breakfast Provided
9:00am-10:30am Panel Paper Presentations
10:30am-11:00am..... Break with Snacks
11:00am -12:30pm Panel Paper Presentations
12:30pm-2:00 pm..... Lunch Provided
2:00pm-4:00pm Panel Paper Presentations
4:00pm-4:30pm Break with Snacks
4:30pm-5:30pm Business Meeting

Tuesday, June 14, 9:00am-4:45pm

Module 1. Basics of Network Analysis

Trainer: *Michael T. Heaney, University of Michigan.* This day-long workshop addresses network analysis for participants who have no prior training in the field. It covers major theories, terminology, measures, data formats, and elementary computer use.

Wednesday, June 15, 9:00am-4:45pm

Participants choose to attend either Module 2a or 2b, depending on their level of prior training in network analysis.

Module 2a. Intermediate Social Network Analysis with UCINET

Trainer: *Steve Borgatti, University of Kentucky.* This day-long workshop assumes a general knowledge of social network concepts but no knowledge of the UCINET software. The workshop begins with importing, exporting, transforming and visualizing network data. Then we cover analysis of network data at three levels of analysis: the group or network level, the node level, and the dyad level. At the dyad level we discuss such concepts as geodesic distance, multiplexity and structural equivalence. At the node level we discuss ego network measures, such as structural holes, and more global measures, such as various concepts of centrality. At the group level we discuss ways of characterizing the shape and level of cohesion of a network. We end with a discussion of approaches to testing hypotheses in a network context.

Module 2b. Exponential Random Graph Models for Social Networks

Trainer: *Garry Robins, University of Melbourne.* This day-long workshop introduces the application of exponential random graph models for social networks. The general theoretical background to these models will be reviewed, model formulation discussed, and simulation, estimation and goodness of fit procedures presented. The incorporation of node-level attributes into these models will also be discussed. For those who bring laptops to the workshop, hands-on exercises using the pnet software will be included, both in simulating relevant graph distributions and in fitting illustrative data sets. Extensions to models for multiple networks, bipartite networks and social influence processes on networks will also be presented. Participants will be expected to understand fundamental social network concepts and terminology and have some background in standard statistical procedures (e.g. the notion of a statistical distribution, regression, logistic regression). Please note that pnet software is freely available to participants. Pnet is written for PCs and may not function well on Apple computers.

Thursday, June 15, 9:00am-12:00pm

Participants choose to attend Module 3a, 3c, or 3d, depending on their substantive and methodological interests.

Module 3a. Sampling and Network Inference

Trainer: *Carter Butts, University of California-Irvine.* Assistants: Lorien Jasny, Emma Spiro, Zack Almquist, Sean Fitzhugh, and Nicole Pierski. Half-day workshop. While network census data -- data in which all relationships among a fixed, known set of entities is observed -- remains the "gold standard" of the social network field, analysts must frequently make due with less. When studying networks on large and/or hidden populations, for instance, a census of all entities and relationships is rarely feasible, and one must resort to sampling procedures. Even in organizational or group-level settings, missing data may occur; and, to make matters worse, the data that is available may be error-prone. Given these realities, what is a researcher to do? In this workshop, I will provide an overview of basic approaches for principled sampling of network data, and for design-based inference from appropriately collected network samples. I will also provide an introduction to model-based techniques for network inference from incomplete and/or error-prone data, as well as data collection designs that make the most of them. The workshop will be conducted via a combination of didactic lecture and hands-on exercises using the statnet suite of software tools for the R statistical computing system; R and statnet are freely available for all major computing platforms, and instructions on downloading and installing these tools will be provided prior to the workshop. Prerequisites: A basic working knowledge of R, network analytic, and general statistical concepts is assumed; knowledge of advanced network modeling techniques (e.g., ERGM) is not required.

Module 3c. Longitudinal Network Analysis with UCINET

Trainer: *Steve Borgatti, University of Kentucky.* This half-day workshop cover a series of techniques for analyzing longitudinal network data using the UCINET software package. The methods range from simple characterizing of trends (e.g., increasing density) to more complex methods of inferring node-level strategies for forming and dissolving ties.

Module 3d. Simulating Behavior in Networks

Trainer: *David Siegel, Florida State University.* This half-day workshop aims to better understand the relevance and consequences of the importance of networks and interdependency in political phenomena, we require theories that illuminate the mechanisms by which networks alter individual and aggregate behavior. While the usual tool quantitative political scientists turn to in these cases--game theory--has provided and should continue to provide a great deal of insight, it is limited in its ability to handle complex networks populated by heterogeneous individuals when the location of these individuals matters to the evolution of the behavior in question. For decades now simulation approaches have been used across the sciences to get traction on such difficult problems, and they prove useful in understanding the role of networks as well. This course will be split into three parts. The first will introduce the Java programming language and the basics of setting up a simulation. The second will focus on when a simulation can be useful, what questions can be answered with it, and how to obtain simulated data from it. The third will cover simulating networks specifically, and ways to interpret simulation results. This session complements Module 3e.

Thursday, June 15, 1:30pm-4:45pm

Participants choose to attend Module 3b, 3e, or 3f, depending on their substantive and methodological interests.

Module 3b. Modeling Networks with Missing Data

Trainer: *Carter Butts, University of California-Irvine.* Assistants: Lorien Jasny, Emma Spiro, Zack Almquist, Sean Fitzhugh, and Nicole Pierski. Half-day workshop. Statistical modeling of network data is an increasingly well-developed field, with a growing array of tools and techniques. Networks with missing data, however, pose special challenges for the network analyst: failure to account for missing data when modeling networks can produce extremely misleading results. In this workshop, I provide an overview of current methods for accounting for both design-missing (e.g., censoring) and unintentional missing data when fitting and evaluating network models in exponential family (ERGM) form. The workshop will be conducted via a combination of didactic lecture and hands-on exercises using the statnet suite of software tools for the R statistical computing system; R and statnet are freely available for all major computing platforms, and instructions on downloading and installing these tools will be provided prior to the workshop. Prerequisites: A basic working knowledge of R, network analytic, and general statistical concepts is assumed. Prior experience with ERG modeling is recommended.

Module 3e. Ego-centered Network Analysis: Using Sample Surveys to Study Social Networks

Trainer: *Meredith Rolfe, University of Oxford.* Public opinion and political behaviour scholars rely heavily on general population sample surveys, a mode of research that does not lend itself easily to the study of social networks and network structure. This half-day workshop discusses how to get around these seeming limitations to test a wide range of network-based hypotheses using sample surveys. The workshop will first introduce the traditional name generators that have been used on political and social sample surveys, and review what sorts of network theories can (and can't) be tested using traditional name generators. We will then consider two approaches that can be used to greatly expand the range of network theories testable using sample survey data: formal theory and agent-based simulations used in conjunction with survey data, and modified survey questions that measure social cleavages and other key aspects of social structure. This session complements Module 3d.

Module 3f. Network Measures and Algorithms (and what they can tell us about the real world)

Trainer: *Mark Newman, University of Michigan.* This half-day workshop will give an overview of the kinds of measurements and calculations you can do with network data and what they can tell you. The premise is that you have measured the structure of a network, such as a social network of acquaintances, a network of company directors, a network of political committees, and so forth. And now you want to know what the network can tell you. Starting with simple and well-established ideas like centrality, reciprocity, and structural balance, the workshop will introduce the basics of the field of network theory with only a modest amount of mathematics. The latter part of the workshop will tackle some more advanced concepts, including paths, flows, robustness, assortativity, and community structure.

Thursday, June 15, 5pm-6pm

Keynote Address. *Garry Robins, University of Melbourne*

Theory and Analysis for Networked Social Systems

Friday, June 17, 9:00am-10:30am

A1. Statistical Network Models – Friday, June 17, 9:00am-10:30am

Testing Policy Theory with Statistical Models of Networks

Mark Lubell, University of California, Davis

John Scholz, Florida State University

Garry Robbins, University of Melbourne

Ramiro Berardo, University of Arizona

This paper presents a conceptual framework for understanding how the network hypotheses embedded in policy theories are related to macro-level political outcomes and micro-level political behavior. We then describe the role of statistical models of networks for testing these hypotheses, including the problem of operationalizing theoretical concepts with the parameters of statistical models. Examples from existing policy research are provided. This paper is forthcoming as the introduction to a special issue of the Policy Studies Journal on statistical models of policy networks.

Statistical Inference for Valued-Edge Networks: The Generalized Exponential Random Graph Model.

Skyler J. Cranmer, University of North Carolina, Chapel Hill

Buce A. Desmarais, University of Massachusetts, Amherst

Across the natural, social, and informational sciences, the statistical analysis of networks plays a central role in the production of knowledge on relational phenomena. Because of their ability to simultaneously model endogenous and exogenous determinants of networks exponential random graph models (ERGMs) are a powerful and popular way to draw statistical inferences on networks. The power of the ERGM comes from its ability to directly model the probability of a network given statistics that capture structural dependencies (such as clustering and reciprocity) and covariates, normalized over all possible permutations of the network of interest. However, ERGMs are limited by an inability to model networks with anything other than binary links. We advance beyond binary links and introduce a class of generalized exponential random graph models (GERGMs) capable of modeling networks whose links have continuous values -- bounded from above, below, neither or both. Our generalized model greatly expands the scope of networks applied researchers can subject to statistical analysis. It also provides a novel means by which to conceptualize the endogenous determinants of valued networks, thus allowing insights into network phenomena that were not possible before this technology. Among other applications, inference with this model offers novel insights into relational features underlying the co-voting network in the European Parliament.

B1. Legislative Organisation & Policy Processes – Friday, June 17, 9:00am-10:30am

Filling the Void: The Social and Informational Power of Legislative Member Organizations

Jennifer N. Victor, University of Pittsburgh

I argue that legislative member organizations (LMOs) serve an important purpose in the legislative process. LMOs are voluntary organizations of made up of legislators with common interests. They create a social network of weak ties between legislators that greatly enhances the opportunity for information sharing and communication flow between actors, in ways that are not possible through the formal institutions of parties and committees. Using social network theory I draw theoretical implications from the informational role of LMOs versus other formal institutions of legislatures. For example, we should observe network features unique to LMOs, as opposed to standing committees, because the LMOs are primarily focused on information sharing while committees are focused on building credibility on issues. Using the case of caucuses in the United States Congress, I test these implications using the complete set of membership data for caucuses in the 109th-111th congresses (2005-2010). I estimate a series of Exponential Random Graph Models (ERGMs) to test the hypotheses laid out in the theory. By and large, the findings generally support the expectations and contribute to the literature by demonstrating the important role these groups play in the legislative process. Moreover, the findings have broader implications for the role of voluntary organizations in democratic processes.

Cycles in Policy Network Structure and Policy Adoption-Implementation Processes: The Importance of Alignment

Gwen Arnold, Indiana University

This paper investigates how aspects of policy networks facilitate or inhibit the efforts of public bureaucracies to adopt and implement science policy innovations. Three correlated characteristics of policy networks – permeability, size, and tie strength – strongly influence adoption and implementation outcomes. Policy networks tend to expand and contract cyclically along these network dimensions. These cycles are the products of pushes and pulls manufactured by policy entrepreneurs or stakeholders, or are the products of larger trends affecting member attrition or infusion. These pushes and pulls can accelerate expansion and contraction of policy networks or slow or halt these cycles. Policy network cycles can be observed over time and in part predicted. Policy adoption and implementation are not binary variables, but rather continually occurring processes that also cycle. Adoption begins with notion that a public bureaucracy could take up a policy innovation. The adoption process moves toward a decision by the bureaucracy to embrace the policy innovation. The process continues in a series of steps preparing for implementation. Implementation begins when the first bureaucrat deploys the policy innovation, continues as the innovation experiences wider use, and reaches an apex where the innovation is wholly implemented by all relevant staff. Implementation may eventually decline as the innovation falls into disuse for a variety of reasons potentially connected to the issue area, political environment, or characteristics of the policy itself (among other factors). The policy may then be resurrected through re-adoption/revision, and the cycle then continues. Like the policy network cycle, the adoption-implementation cycle can be accelerated, slowed, or stopped entirely by manipulation of policy entrepreneurs and other key actors, or through the influence of more global trends. This cycle also can be observed over time and in part predicted. Successful adoption and implementation outcomes are most likely when adoption-implementation and network expansion-contraction cycles are aligned such that adoption occurs when the policy network is less permeable, smaller, and more laden with stronger ties, and implementation occurs when the network is more permeable, larger, and more laden with weaker ties. When cycles are not optimally aligned, adoption and implementation efforts are more likely to fail or stall. The degree and nature of misalignment can help an analyst predict the pace and fate of adoption or implementation. This argument draws on literature concerning policy networks as well as collective action, social capital, dynamics of advocacy coalitions, and the adoption of innovation across American states. It is illustrated with case studies that describe the attempts by environmental bureaucracies in six U.S. Mid-Atlantic states to adopt and implement a science policy innovation for wetland management. The case studies are based on more than 80 interviews with environmental bureaucrats and stakeholders in the region, as well as secondary-source analysis and ongoing survey research.

C1. Organizational Networks – Friday, June 17, 9:00am-10:30am

Collaboration and Culture: Organizational Style as a Cause and Consequence of Collaborative Networks

Christopher Weare, University of Southern California

Paul Lichterman, University of Southern California

Nicole Esparza, University of Southern California

In recent years networks of inter-organizational collaboration have received increasing attention from political science and public administration scholars. From a policy perspective, this interest has been sparked by the rise of networked-based forms of policy development and implementation that have arisen due to the devolution of policy responsibilities to local actors and increasing reliance on public-private partnerships. From a scholarly perspective, this interest is due to the increasing awareness that social structure and not just the characteristics of individual actors, are important determinants of organizational behavior and system performance. In this paper we introduce the importance of organizational culture to both the formation of and consequences of networks of interorganizational collaborations. While sociologists have been interested in the link between culture and networks (Emirbayer and Goodwin 1994; Mische 2003) and political scientists have examined the cultural roots of political preferences (Wildavsky 1987), the extant literature on collaborative and policy networks has paid scant attention to the role played by organizational culture. This omission is problematic given that culture - conceived as shared, meaningful, and often normatively binding patterns of action and interaction -- - arises from the social structure and social interactions within which individuals and organizations are embedded (e.g., their social networks) and these shared understandings in turn influence network formation by delineating what makes an adequate partnership and who is an adequate partner. Thus, culture and networks are closely linked. To develop an empirically useful approach to culture, we borrow from recent research on

“organizational style” (Eliasoph and Lichterman 2003). An organizational style is a pattern of interaction that arises from a group's shared assumptions about how to coordinate action and what constitutes good or adequate participation in the group setting. It involves three key components: group boundaries, speech norms and the bonds that tie members to others within the group. We derive a number of mechanisms that detail how particular styles facilitate or inhibit collaborative behavior and how differing styles tend to interact. We demonstrate the importance of these culture-based mechanisms employing a unique dataset on the field of affordable housing in Los Angeles. The dataset combines social network data of organizational collaborations between private, non-profit, and state actors with ethnographic observations of a set of key organizations. We identify organizational style through ethnographic observation and content analysis of mission statements, and we detail the structure of organizational collaborative networks through both a sociometric survey and with ethnographic field data. We then demonstrate how organizational styles play a central role in the constitution and fissure of a central coalition. We suggest that the organizational style concept illuminates network dynamics difficult to grasp purely in terms of either rational, interest-based action or social structure.

Temporal Dimensions of Organizational Network Stability: An Example in the Context of Project Teams

Eric Quintane, University of Lugano and University of Melbourne

Philippa Pattison, University of Melbourne

Garry Robins, University of Melbourne

Organizational network research focuses on the patterns of stable, long-term relationships. This long-term perspective has proven useful in order to examine the unfolding of social processes that are stable over time. Yet, many organizations face environments that require them to adapt and change over very short periods of time. These short-term changes are usually not captured in organizational network analysis, and the literature is silent on how they may relate to long-term network stability or to organizational stability. In this paper, our aim is to broaden our understanding of the temporal dimension of network processes. We argue that stable social processes exist in different time frames, ranging from short to long-term, and are not subsumed into long-term processes. Specifically, we focus on reciprocity, centralization and closure, and the different time frames in which they can be embedded. Using the example of the e-mail communications patterns of two project teams, we examine the temporal dynamics of organizational networks by considering short-term regularities in interaction structures as well as regularities observed over longer periods. We use the recently developed Relational Event Model to examine these network processes over multiple overlapping time frames using continuous data (without the need for cross sectional aggregation). Our results show that team interaction structures exhibit regularities not only in the long-term, but also in the short-term, thus demonstrating that stability is not confined to long-term social interactions. For instance, closure has a strong propensity to have regular occurrences in the short term, which reveals a form of coordination that is temporally bound and goes beyond the traditional transitivity argument. We discuss the role of interaction regularities across different timescales in maintaining stability and flexibility in organizations as well as implications for organizational network research.

Skill Specialization and the Formation of Collaboration Networks

Katharine Anderson, Carnegie Mellon University

In this paper, I consider the relationship between specialization of skills and network structure. First, I look at how the specialization of fields affects the overall structure of collaboration networks. Using a model of skill specialization and collaboration network formation, I show that as disciplines become less insular, the collaboration network becomes increasingly dominated by a small number of individuals. I then examine how an individual's choice to be a specialist or generalist affects her position in the collaboration network. I compare specialists and generalists with the same number of skills and show that specialists will tend to have more links in the network than generalists with the same number of skills. However, I show that generalists are more likely than specialists to occupy key central positions in the network.

D1. Networks on Facebook – Friday, 9:00am-10:30am

Measuring Political Discussion in a Network of 100 Million Facebook Users

Robert Bond, University of California, San Diego

Chris Fariss, University of California, San Diego

James Fowler, University of California, San Diego

Jason Jones, University of California, San Diego

Jaime Settle, University of California, San Diego

The political discussion literature seeks to answer questions related to the frequency of political disagreement in discussion networks; whether respondents can accurately detect political disagreement in their networks; and whether political disagreement changes attitude stability, attitude strength, or political engagement. As common in other forms of network analysis, research design has commonly employed measures of discussion in dyads, as opposed to capturing dynamics within a respondent's larger discussion network. Thus, while much of the theory in this literature is concerned with political discussion broadly, our understanding is mostly limited to aggregated patterns in self-reported dyadic interactions. In an effort to improve the measurement of both the content and context of political discussion, we derive a unique dataset of political discussion from the wall postings and status message updates of over 100 million Facebook users. This paper outlines the methods used to derive the measure of political discussion as well as preliminary findings about patterns of discussion within egocentric networks.

The Daily Brew: The Structural Evolution of the Coffee Party on Facebook During the 2010 United States Midterm Election Season

Christopher Mascaro, Drexel University

Sean Goggins, Drexel University

The activity of the Facebook Group, "Join the Coffee Party Movement" (Coffee Party) is studied during a 7-month period leading up to and following the 2010 United States Midterm election. During this time, Coffee Party Facebook page administrators posted 904 parent posts on the group's main Facebook page. There were 152,762 comments in response. In order to process these parent posts and comments using social network analysis we used a previously established method of analyzing electronic trace data. First, the parent posts were open coded based on the salient theme of the post utilizing a previously established coding schema (Mascaro & Goggins, 2011). The codes were then grouped before performing axial coding on all of the parent posts. Overall, there were 21 codes that were applied to the parent posts, with each parent post receiving one code except for those with an explicit call to action in which the parent post received an additional code. Following the coding of the parent posts the comments were analyzed using a protocol for analysis of electronic trace data that reprocesses the data to account for its presentation on a page when a user contributes a comment to a parent post (Goggins, Laffey & Gallagher, 2011; Goggins, Galyen & Laffey, 2010). In the analysis, each comment in the thread has some relationship to comments that precede it, but the strength of this relationship decays along two dimensions, the adjacency of the comment to preceding comments and the timeframe in which the comment was posted. This processed data was used to construct a weighted social network. We measured network centralization and total post activity for high betweenness centrality (Freeman, 1979) individuals across three dimensions: 1) Time, 2) Parent Post Category and 3) Specific Parent Posts. For each dimension, network centralization for the entire network and betweenness for each actor within that network was calculated. This allowed for the analysis of central and peripheral actors to be analyzed in the context of the network structure. The analysis illustrates a set of three interesting findings. First, the network structure of the group varies greatly over the course of the timeframe that correlates to three distinct time periods: the time preceding the midterm election, the time immediately following the midterm election and the time period in which the recently elected candidates took office. Second, the Coffee Party Administrators act as agenda setters with the parent posts, but also affect the network structure by participating in the discourse at varying levels over the course of the observed timeframe. Third, contributors to the discourse choose to participate in different capacities depending on the specific parent post. Many individuals emerge as "issue entrepreneurs" by only actively participating in a small subset of parent posts categories. The findings have many implications for issue groups and candidates who utilize social media tools to mobilize support and engage with supporters.

Friday, June 17, 11:00am-12:30pm

A2. Network mechanisms – Friday, June 17, 11:00am-12:30pm

Is Influence Mightier than Selection? Forging Agreement in Discussion Networks During a Campaign

Jason Bello, University of Oxford

Meredith Rolfe, University of Oxford

To what extent do social networks shape a person's vote choice? Using data on political networks gathered during a novel, multi-wave panel study conducted during the 2010 election cycle in the UK, we argue that although people may choose to discuss politics more often with those who hold similar political views, remaining disagreements in political discussion networks can still have a substantial impact on vote choice. Our study is the first large scale, general population sample survey to track changes in an individual's named political discussion partners over the course of an election campaign, and thus provides a unique opportunity to study the simultaneous processes of selection and influence in political discussion. Using longitudinal and multilevel statistical analysis we present evidence for two social processes, "selection", or the likelihood that people choose discussion partners based on their political views, and "influence", the convergence of views between discussion partners.

Cross-Pressures and Political Behavior: Untangling the Causal Mechanisms

Andrew Therriault, New York University

Joshua A. Tucker, New York University

Since the earliest studies of voter behavior, researchers have been interested in the detrimental effects of cross-pressures on participation, but the mechanism by which voters experience and respond to cross-pressures remains unclear. Two main theories have emerged: attitudinal cross-pressures (in which voters' policy preferences push them toward different parties and candidates) and social cross-pressures (in which voters receive inconsistent influences from their social networks). Each has been shown to decrease participation, but extant research offers little guidance as to how to distinguish between the two. To untangle the relationships between social networks, individual attitudes, and behavior, we analyze data from the 2006 General Social Survey, which includes direct measurements both of individuals' policy preferences and of the partisanship of their social networks. We use these data to evaluate the distinct effects of attitudinal and social cross-pressures on whether respondents identify with a party, the stability and strength of those affiliations, their interest in politics, and their likelihood of voting. These analyses provide substantial insight into the impacts of these cross-pressures on behavior.

B2: Networks and Policy Outcomes – Friday, June 17, 11:00am-12:30pm

Policy Coordination in an Ecology of Water Management Games

Mark Lubell, University of California, Davis

Garry Robins, University of Melbourne

Peng Wang, University of Melbourne

Policy outcomes in all but the simplest policy systems emerge from a complex of ecology of games featuring multiple actors, policy institutions, and issues, and not just single policies operating in isolation. This paper updates Long's (1958) ecology of games framework with Scharpf's (1997) actor-centered institutionalism to analyze the coordinating roles of actors and institutions on the context of the ecology of water management games in the San Francisco Bay. Actors participating in multiple institutions are analyzed using exponential random graph models for bipartite networks, by comparing observed network structures to those predicted by simple models representing different assumptions about policy behavior. We find that the most important coordinators in the SF Bay policy ecology are Federal and State agency actors, along with collaborative policy institutions. In addition, network configurations associated with closure and clustering show the most significant departures from the expected frequencies from null random models, which is consistent with the Berardo and Scholz (2010) "risk hypothesis" that closure is important for solving cooperation problems.

The Transformation of American Policymaking Networks Since 1945

Matt Grossmann, Michigan State University

The American policymaking system and its main outputs, public policy enactments, have evolved considerably since World War II. In 1961, the federal government began a dramatic 20-year expansion in its scope led by Lyndon Johnson's Great Society program. After 1981, public policy enactments became less frequent and much more conservative. These developments have traditionally been treated as consequences of secular patterns in public opinion, interest group development, and political party power. Instead, I argue that the policymaking system underwent two system-level transformations. The pattern of connections among different parts of the political system changed, rather than the relative influence of each branch of government or any outside force. In the 1960s and 1970s, a diverse core group of policymakers, government agencies, and interest groups jointly led a sustained domestic policy movement in many areas. After 1980, that core dissolved without an alternative stable system to replace it. To understand the system-level changes in federal policymaking, I aggregate information from 130 books and articles that review at least one decade of policy history in one of ten domestic policy issue areas: civil rights & liberties, criminal justice, education, energy & environment, health, housing & community development, labor & immigration, science & technology, taxes & budget, and transportation. The histories collectively uncover 643 notable policy enactments, primarily laws passed by Congress but also executive orders, agency rules, and court decisions. Their narrative explanations credit 874 specific individuals and organizations for helping to bring about these enactments. I create affiliation networks based on the participants involved in each policy enactment. The nodes are actors credited with a policy enactment and the links connect actors that were credited with the same enactment. The network ties are undirected but they are valued as integer counts of the number of shared policy enactments between every pair of actors. I analyze the interactions among these actors and the patterns of policy output in three different eras. From 1945-1960, limited policy activity was centralized in the executive branch. From 1961-1980, extensive liberal policymaking was credited to a core of closely connected actors. After 1981, this core dissolved into separate communities as policy output vacillated. These differences, however, cannot be attributed to any broad increase or decrease in the attributed influence of Presidents, Members of Congress, interest groups, or government agencies. Instead, the links connecting them changed. From 1961-1980, a dense core developed as each President was connected to a similar subset of Members of Congress and interest groups. This historical pattern can be seen in nine of the ten policy areas that I analyze, as well as in the combined network. The breakdown of this network, however, did not lead to division into separate issue networks, as typically claimed. Instead, according to the aggregated policy histories, policymaking under each presidential administration and Congress after 1980 was concentrated within a different set of policymakers and outsiders. I analyze how these changes in the patterns of interaction across the political system produced different policy outputs in each era.

Conditional Effect of the Strength of Ties in Mobilizing Network Capital

Manoj Shrestha, University of Idaho

While network literature emphasizes the importance of bonding and bridging networks in facilitating the access to network capital for actor's success, how the strength of ties - measured by frequency of contacts - affect the mobilization of bonding and bridging network capital is less understood. Given that maintaining networks is costly and actors have limited resource available (e.g., time) for maintaining contacts, this paper argues that the actors utilize frequent contacts (or strong ties) to maintain bonding network and infrequent contacts (or weak ties) to maintain bridging network. The results of a study of Rural Community Water Supply and Sanitation Program in Nepal, where communities seek diverse resource from specialized organizations to be able to prepare better project proposal and thereby to secure the agency funding for their community water supply projects, are consistent with the claim suggesting the prevalence of common social rule that building friends requires more investment than building acquaintances.

C2. Campaign Contributions – Friday, June 18, 11:00am-12:30pm

The Mobilization of Political Contributions through Corporate Board Interlocks

David Lazer, Northeastern University and Harvard University

Derek Ruths, McGill University

Bruce Kogut, Columbia University

There is surprisingly little research on the corporate board as a context that mobilizes political behavior. The sociology literature had hit upon the challenge of explaining how sparse networks can justify claims of

coordinated action. The impact of the new science of networks (Watts, 2004) represented a revolution in this regard by showing that particular topologies (e.g. small worlds) facilitated communication and coordination despite low and sparse densities. The economic literature has increasingly become interested in political connections, but largely has treated networks as ‘ego’ networks as opposed to investigating their structural properties (Cohen, Frazzini, and Malloy 2007). Our proposal is to link several networks (political, economic, and social) and to trace the flow of money and influence in the context of the topological properties of these networks.

Your Money Where Your Mouth Is: Financial Contributions and Presidential Candidate Endorsements in the U.S. Congress

Hans Noel, Georgetown University

Suzanne Robbins, George Mason University

Social networks research on political parties has thus far focused on one aspect of the party at a time. Scholars have collected data on financial contributions, political consultants, political protests, interest group advocacy activity, interest group donor solicitations and candidate endorsements, but analysis has been restricted to each domain in isolation. But political parties bridge these different domains. Indeed, such bridging is in their very nature, especially as they are conceived by social networks researchers. We begin the efforts to bridge domains by examining the joint network of two very related party phenomena: financial contributions and candidate endorsements. Just as “early money is like yeast”, endorsements can help strengthen a presidential candidacy. Both money and endorsements play vital roles in creating early momentum for would-be presidential candidates. They both signal viability, support and connections. Previous research has shown that contributions and endorsements are part of a network that has the potential for advancing candidacies under certain circumstances, depending upon the characteristics of the networks. In this paper, we examine the extent to which these two networks share similar characteristics using original and archived network data. We do so both cross-sectionally (focusing on the 2008 primary season) and longitudinally (through 1992). Bridging these domains will help us address three questions. First, how do concerns about the presidency affect legislative politics? Second, how does legislative politics affect who is supported for the nomination? And finally, how linked are parties across domains?

D2. Power in Networks – Friday, June 17, 11:00am-12:30pm

How Important are Network Connections to Army Officer Promotion?

Dominick Wright, Institute for Defense Analysis

Col. John Lindsay, Institute for Defense Analysis

The General Officer Management Office (GOMO) prides itself in managing an officer promotion system that effectively, efficiently, and fairly guides Army officers along their career paths in the effort to maintain a high-quality force structure. Although prominent works in the literature largely accept the fairness claim without question (e.g., RAND’s *Aligning the Stars*), semi-structured and in-depth interviews with junior and general officers along with civilian governmental workers reveal an alternate perspective. Opinions differed regarding the desirability of impartiality in the promotion process (i.e., some felt it hampered the system, yet others considered it an integral part of Army culture) but all agreed that it was present. This brings two issues into question. The first concerns whether the impartiality exists, and the other evaluates its implications if it exists (or enough people act on it under the perception that it does exist). This paper seeks to determine if the suggestion of unfairness in promotion withstands the scrutiny of rigorous empirical analysis of nearly 10 years of data drawn from the evaluation of promotion board results for Major Generals. Specifically, it determines if certain officers receive an unfair advantage because of sharing bi-partite connections (i.e., those jointly conditioned on assignment and place) with board members. References to themes of “tribes” dominated many of the small-group and individual interviews, stating that affiliations like branch as well as linkages between shared duty assignment and location strongly influence who successfully ascends in the system. Tribal influence may be myth conjured in attempts to explain away failure to succeed in an arcane system or statistically supported evidence of an imperfection in the GOMO system potentially in need of correction.

Networks and regulation in new capital market institution at Warsaw Stock Exchange

Michael Zdziarski, Warsaw University

The purpose of the paper is to investigate the network of informal relationship among business elite in recently created capital market in Poland. With several new capital markets created in last 20-30 years, and the increasing role of developing economies as engines of global economic growth, the interest in understanding of institutional setting of these markets increases. My study focuses on Poland which entered into transition from central planned, communist economy early and founded its Stock Exchange in 1991. The legal framework for capital market in Poland was adopted from France with some inspirations from other developed markets. Regulations of workers representation in Boards are similar to Danish. The two tier system of separate executive and supervisory Boards resembles German model, or more broadly continental European model of corporate governance. While resulting legal setting is unique and perhaps missing some coherence, the differences are not larger than among any two developed markets in Europe with long existing stock exchanges. Would formal relationships through interlocking directorates have similar patterns to those observed in other European studies? Based on data from Lexis Nexis on Boards of 244 companies and over 2000 directors I have analyzed two mode networks of boards and directors, compared small world statistics as well as centrality measures. Reduction of network enabled to present and analyze its more stable core. These lead to additional set of questions. Are banks, financial institutions and large, blue chip companies central actors in the network? Who are most influential actors? What are implications of observed structure and patterns? Should policy implications and regulation framework be different in emerging markets while new institutions are created to enable social system to develop accordingly?

Friday, June 17, 2:30pm-4:30pm

Semi-Plenary A3: Friday, June 17, 2:30pm-4:30pm

A Massive Scale Experiment in Social Influence and Political Mobilization

James Fowler, University of California, San Diego

Human behavior is theorized to spread in face-to-face social networks, but it is difficult to identify social influence effects in observational studies and it is unknown whether online social networks operate in the same way. Here, we conduct a randomized controlled trial of different political mobilization messages with 61 million Facebook users in the 2010 U.S. Congressional elections. The results show that messages employing information about the behavior of a user's friends spread more effectively than do non-social messages. The messages not only influenced the users who received them, but the users' friends as well. We estimate that the direct effect of the messages yielded at least 1.3 million additional voters on Election Day, while indirect effects due to social influence spreading through the network yielded an additional 1.4 million voters. This may be the largest randomized controlled experiment of any kind ever conducted, and it suggests that online social networks might be harnessed to influence political, social, and other behavioral outcomes.

Networks of Mobilization: Student Involvement in a Municipal Election

Robert Huckfeldt, University of California, Davis
Ronald B. Rapoport, College of William and Mary
Daniel Maliniak, University of California, San Diego
Patrick Miller, Duke University
Matthew T. Pietryka, University of California, Davis

In May of 2010, the city of Williamsburg, Virginia held a municipal election with potentially important consequences for students at the College of William and Mary. The city council election campaign revolved around several measures interpreted by many as being directed at William and Mary students. These included a noise ordinance and a limitation of no more than four unrelated individuals within a single dwelling. In response, student groups made concerted efforts to mobilize student interest and involvement in the election, and one William and Mary student ran as candidate for the city council. This election provides an opportunity to address several issues regarding the social mobilization of political engagement. The data we employ in this paper were collected to take advantage of the opportunity to study the process of political mobilization through the networks of association among the students at William and Mary. The study is a multi-wave panel study employing on-line surveys of individuals. The target population was all William and Mary students, with a response rate on the first pre-election wave of slightly higher than 50 percent, producing 2,857 responses. The target population for the second pre-election wave included all respondents to the first wave, as well as associates of the first wave respondents who were not interviewed at the first wave. This produced a second wave sample of 1912 respondents, based on a response rate of 65 percent. For the third post-election wave, the target population stayed the same, with a response rate of 65 percent producing a sample of 1910 respondents. Nearly 81 percent of second wave respondents were interviewed at the third, post-election wave. At the first wave of the survey, respondents were asked to provide the "first and last names of up to five of your closest friends who attend William and Mary." Of the 1837 respondents who answered the name generator question, the mean number of friends provided by respondents was 4.6. Only 401 respondents provided less than 5 names. Our paper is particularly concerned with the structure of communication during the campaign. Recent efforts have proposed different models of influence within communication networks. One set of expectations is that influence would be widespread – a relatively large number of individuals would be local influentials, where localities are defined in terms of small, relatively compact networks. Another set of expectations is that a relatively small group of individuals would be hyper-influentials, either because a large number of individuals directly rely on them for information, or because they are connected indirectly to a particularly large proportion of the population. These are particularly important issues for the study of democratic politics. One set of expectations leads to a radically democratic vision in which expertise and political leadership is spread broadly through the population. The other set of expectations leads to the vision of a democratic elite – a small group of individuals who play a particularly outsized role in the deliberations of democratic politics.

Semi-Plenary B3: Friday, June 17, 2:30pm-4:30pm

The Politics of Communist Economic Reform: Soviet Union and China

John Padgett, University of Chicago

I lay out a framework for analyzing the co-evolution of economics and politics in communist systems. To move from vision to reality, economic reform has to induce the interests that can carry it through. Interests triggered in support of a reform or in deflection of it always emerge on a lattice of prior economic and political networks, which have been laid down in previous iterations. This was the flaw of western economic advice to Soviet leaders in the 1980s and 1990s: to assume that communism could be transformed by decree. Living network systems are never designs; they are organic transformations, often turbulent and unintended, of older network systems that have tipped into the new.

Difference and Deliberation: The (de)Mobilizing Effects of Politically Heterogeneous Relationships

David Lazer, Northeastern University and Harvard University

Anand E. Sokhey, University of Colorado, Boulder

Michael Neblo, The Ohio State University

Kevin Esterling, University of California, Riverside

Contemporary debates on social influence and deliberative democracy focus on demonstrating causal effects, and on better understanding the degree to which citizens actually experience disagreement in their political discussion networks. But while methodological advances in both design and analysis have generally supported a generation of research, few works have considered the lasting effects of exposure to political disagreement. In this paper, we employ the several nationally representative data sets – the 2000-2002-2004 ANES panel, and the 2008-2009 ANES panel – to consider 1) the longitudinal implications of exposure to difference in core networks, and 2) whether there are distinct patterns of effects based on varying definitions and measures of disagreement. Both data sets include distinct measures on exposure to disagreement in core political networks – networks which are likely to remain relatively stable across varying time spans. Using the 2000-2002-2004 ANES, we match respondents on exposure to interpersonal disagreement during the 2000 election, and then examine for effects on opinion formation, engagement, and participation in both immediate (in the 2000 cross-section), intermediate (2002 midterms), and long-term time spans (2004 presidential election). We supplement this analysis with the 2008-2009 ANES panel study, which includes multiple follow-ups with respondents, spanning up to 10 months after the general election. After matching panelists on exposure to disagreement in the fall of 2008, we consider the same political consequences immediately after the election, as well as 2, 6, 8, and 9 months out.

Friday, June 17, 4:45pm-5:45pm

Plenary Address. *Mark Newman, University of Michigan*

Epidemics, Influence, and Kevin Bacon: Social Networks meet Network Theory

Friday, June 17, 6:00pm-8:00pm

Poster Session #1: Friday, June 17, 6:00pm-7:00pm

- #1 **How Terrorist Organizations Survive: Cooperation and Competition in Terrorist Group Networks**
Brian J. Phillips, University of Pittsburgh and CIDE (Mexico)
- #2 **Cities in Isolation: Contextual Effects of Economic Segregation on Political Discussion Networks**
Andrea Mayer, Georgetown University
- #3 **National Security and the Regulation of Global Financial Networks**
Annelies Z. Kamran, The Graduate School and University Center, CUNY
- #4 **Reconsidering the Benefits of Minority Cohesion: The Difference Between Relative and Absolute Cohesion in the U.S. House of Representatives**
Bryce J. Dietrich, University of Illinois
- #5 **The Emergence of Local Elite Networks and Political Performance: A Combination of an Agent-based and an Econometric Approach**
Christian Henning, University of Kiel
Christian Aßmann, University of Bamberg
Johannes, University of Kiel
- #6 **Local and Global Diversity in Networks and Systemic Performance**
David Lazer, Northeastern University
Charles Gomez, Stanford University
- #7 **Exploring the Utility of EGRM as a Gauge for Discriminating between Alternate Network Generating Processes**
Dominick' Wright, Institute for Defense Analysis
- #8 **Rumoring During Extreme Events: Deepwater Horizon 2010**
Emma S. Spiro, University of California, Irvine
Jeannette Sutton, University of Colorado, Colorado Springs
Matt Greczek, University of Colorado, Colorado Springs
Carter T. Butts, University of California, Irvine
- #9 **The Birth and Influence of Rules: Examining Communities for Online Public Engagement**
Helen K. Liu, University of Hong Kong
- #10 **Mapping the Local Sustainable Energy Policy Network in South Florida**
Hongtao Yi, Florida State University
- #11 **Political Independence Index: Node Favorability in Politically Charged Networks**
Jason Smith, University of Kentucky
Virginie Lopez-Kidwell, University of Kentucky
Dan Halgin, University of Kentucky
Giuseppe Labianca, University of Kentucky
- #12 **A Network Approach to Collective Action on Climate Change**
Jennifer Hadden, Cornell University
- #13 **Exploring the Network Effects on Collaborative Connections: The Case of Transportation Policy Network in Korea**
Jeongyoon Lee, University at Albany, SUNY

- #14 **The Breakdown of the American Corporate Elite Network, 1999-2009**
Johan S.G. Chu, University of Michigan
Gerald F. Davis, University of Michigan
- #15 **The Role Players Sense of Self: The Self-Perceptions of Individuals Who Occupy Critical Positions in Online Graduate Education Social Networks**
John Cowan, Northern Illinois University
- #16 **Conflict Displacement and Dual Inclusion in the Construction of Germany**
Jonathan Obert, University of Chicago
John F. Padgett, University of Chicago
- #17 **Competition in Collaborative Networks?**
Josephine Gatti, University of Nevada, Las Vegas
- #18 **Regional Networks, Entrepreneurships, and Institutions for Local Sustainability**
Jungah Bae, Florida State University
Richard C. Feiock, Florida State University
- #19 **Breast Cancer Activism**
Kristen Abatsis McHenry, University of Massachusetts, Amherst
- #20 **The Web of Politics: Examining a Tobacco Control Policy Network Using Social Network Analysis**
Sarah Moreland-Russell, Washington University
Bobbi Carothers, Washington University
Jenine Harris, Washington University
- #21 **Passaparola, The Movement of Political Information and Organization in Two Immigrant Communities In Rome**
Le Anh Nguyen Long, Indiana University
- #22 **Mapping the Political Twitterverse**
Leticia Bode, University of Wisconsin
Alexander Hanna, University of Wisconsin
Ben Sayre, University of Wisconsin
JungHwan Yang, University of Wisconsin
Dhavan Shah, University of Wisconsin
- #23 **RISE: Randomization for Spillover Effects**
Mark M. Fredrickson, University of Illinois

Poster Session #2: Friday, June 17, 7:00pm-8:00pm

- #24 **Trade Blocs, Interstate Conflict, and the Collective Impact of Economic Integration**
Matthew Shaffer, University of South Carolina
- #25 **Online Social Networks and the 2010 UK Elections: A Comparative Network Analysis**
Maurice Vergeer, Radboud University and Yeungnam University
- #26 **VisPolitics: A Website for Political Contents and Beautiful Visualizations**
Mauro Martino, Northeastern University
David Lazer, Northeastern University
Yu-Ru Lin, Northeastern University
Jesse Chu-Shore, Northeastern University
Skylar Place, Northeastern University
- #27 **American Military Leadership, Service Networks, and Priorities in Military Spending**
Michael E. Flynn, Binghamton University, SUNY
- #28 **When Democracies Repress! Democratic Repression of Non-Violent Islamist Groups and the Likelihood of Political Violence from 2002-2010**
Peter Vining, Pennsylvania State University
- #29 **A Comparison of Email Networks and Off-line Social Networks: A Study of a Medium-sized Bank**
Rebeka Lex, University of Lugano
Balazs Kovacs, University of Lugano
Andras Vicsek, Maven7
- #30 **The Network Structure of Federal eGovernment: Using Hyperlinks to Analyze the .gov Domain**
Ryan Whalen, Northwestern University
- #31 **Policy Processes and Networks: An Examination of Smokefree Policy Diffusion**
Sarah Moreland-Russell, Washington University
Jenine Harris, Washington University
Bobbi Carothers, Washington University
- #32 **A Cross-National Comparison of the Effects of Military and Political Participation on Life Histories**
Sean M. Fitzhugh, University of California, Irvine
Carter T. Butts, University of California, Irvine
Joy E. Pixley, University of California, Irvine
- #33 **Social Capital, Collective Action, and Voting Behavior : Politically Relevant Social Capital in Naju and Jeongeup**
Seungmin Kuk, Seoul National University
- #34 **An Agent-based Model of Mobilization in Socio-political Movements**
Shah Jamal Alam, University of Michigan
Sadaf Alvi, University of Michigan
- #35 **Building a Better Diffusion Model: Adding K-Adic Representation and Population-based Policy Searches**
Srinivas Parinandi, University of Michigan
- #36 **Interstate Networks and Democratization**
Steffen Mohrenberg, University of Hamburg
- #37 **The Triad That Binds: How Common Financial Analyst Coverage Reveals Different Motivations of Corporate Leaders to Maintain Board Interlocks**
Sun Hyun Park, University of Michigan

- #38 **Who Teaches and Who Learns? Policy Learning through the C40 Cities Climate Network**
Taedong Lee, City University of Hong Kong
- #39 **Defense Against Recession: U.S. Business Mobilization, 1950-70**
Todd Schifeling, University of Michigan
- #40 **The Road to Democracy: A Three-Society Comparison of Civic Network Structures**
Yanlong Zhang, Duke University
- #41 **Strategic Policy Networks among Orlando Economic Development Organizations: Exponential Random Graph Model (ERGM) Approach**
Youngmi Lee, Florida State University
In Won Lee, Dankook University
Richard Feiock, Florida State University
- #42 **Follow the Leader: Hierarchical Group Dynamics in the U.S. Congress**
Yunkyu Sohn, University of California, San Diego
James Fowler, University of California, San Diego
- #43 **Contending Parties: A Logistic Choice Analysis of Inter and Intra-group Blog Citation Dynamics in the 2004 US Presidential Election**
Zack W Almquist, University of California, Irvine
Carter T Butts, University of California, Irvine
- #44 **Bloodline and Political Cohesion: Kinship Network and the Unity of Political Donation Among Business Groups in Taiwan**
Zong-Rong Lee, Institute of Sociology, Academia Sinica, Taiwan
- #45 **First Street**
Todd Baldwin, CQ Press
- #46 **Inside the Black Widow's Web: Some Findings from an Analysis of Network Ties between Terrorist Organizations**
Michael Genkin, Cornell University

Saturday, June 18, 9:00am-10:30am

A4. Disagreement – Saturday, June 18, 9:00am-10:30am

Local Connections: Electoral Institutions, Social Networks, and Local Politicians in a Developing Democracy

Amy Erica Smith, University of Pittsburgh and Vanderbilt University

How do the electoral and party systems affect citizens' social networks? I begin by examining the consequences of extreme multipartism at the local level for citizens' connections to local politicians and activists, using as a case study the 2008 local election campaign in Juiz de Fora, Brazil. Survey data from the 2008 election campaign in Juiz de Fora, Brazil, reveal that a very high percentage of respondents know both politicians and political activists. Such connections serve as an important source of political socialization and mobilization over the course of the electoral campaign. Using coarsened exact matching to reduce threats to causal inference, I show that ties to politicians and activists affect political learning, turnout, and clientelistic dispositions, and that they often have a more powerful effect on political knowledge and turnout than do respondents' closest discussants.

How Long Does Conflict in Social Networks Affect Political Behavior?

Anand E. Sokhey, University of Colorado, Boulder

Casey Klofstad, University of Miami

Scott McClurg, Southern Illinois University

Contemporary debates on social influence and deliberative democracy focus on demonstrating causal effects, and on better understanding the degree to which citizens actually experience disagreement in their political discussion networks. But while methodological advances in both design and analysis have generally supported a generation of research, few works have considered the lasting effects of exposure to political disagreement. In this paper, we employ the several nationally representative data sets – the 2000-2002-2004 ANES panel, and the 2008-2009 ANES panel – to consider 1) the longitudinal implications of exposure to difference in core networks, and 2) whether there are distinct patterns of effects based on varying definitions and measures of disagreement. Both data sets include distinct measures on exposure to disagreement in core political networks – networks which are likely to remain relatively stable across varying time spans. Using the 2000-2002-2004 ANES, we match respondents on exposure to interpersonal disagreement during the 2000 election, and then examine for effects on opinion formation, engagement, and participation in both immediate (in the 2000 cross-section), intermediate (2002 midterms), and long-term time spans (2004 presidential election). We supplement this analysis with the 2008-2009 ANES panel study, which includes multiple follow-ups with respondents, spanning up to 10 months after the general election. After matching panelists on exposure to disagreement in the fall of 2008, we consider the same political consequences immediately after the election, as well as 2, 6, 8, and 9 months out.

B4. Corporate Networks – Saturday, June 18, 9:00am-10:30am

Political Strategy and Corporate Networks: The Effect of Interfirm Ties on Lobbying Practices

Eric J. Neuman, University of Illinois

Mark S. Mizruchi, University of Michigan

Among the many reasons the American public gives for being apprehensive, if not fearful, of corporations is the belief that corporations have a disproportionate say in shaping American politics. Reactions to the recent *Citizens United vs. Federal Elections Commission* Supreme Court ruling that lifted restrictions on corporate spending toward political campaigns is but one example of this. Yet despite the attention given to the regulation of *individual* corporate political behaviour, the primary concern has been with groups of corporations acting *collectively* to affect governmental and political change. In this paper, we consider this issue by examining the effectiveness of interfirm networks on corporate political activity. To what extent are corporations behaving similarly in their attempts to influence American government? Are networks a contributing factor to this, and if so what is the underlying mechanism?

Is the European Corporate Elite More Cohesive after the Crisis? Evidence from the European Network of Interlocking Directorates in 2005 and 2010

Eelke M. Heemskerk, University of Amsterdam

The recent financial and subsequent economic crisis underscores that boards of directors are of public concern. The politics of corporate governance, that is the way in which firms are managed and controlled and how interests are weighted deserves ample attention from disciplines such as political science. A corporate elite of directors and board members makes corporate governance decisions. This elite is embedded in a social networks that connects the decision making centres of big business through interlocking directorates. The recurrent finding in studies of national networks of interlocking directorates across the globe has been that ever since the heydays in the early 1970s, these corporate networks are in decline. But during the past decade Europe has been a rare exception as the incidence of board interlocks across European borders increased. The first objective of the paper is to assess whether the European corporate elite continue to invest in European ties between corporate boards during and following the financial crisis of 2007-2009. As a basis for a proper assessment we review the empirical literature on international networks of interlocking directorates. The review establishes common empirical ground regarding transnational corporate networks, distils the robust and stable findings of these studies, and establishes a base line against which it is possible to assess what the impact of the financial crisis has been on the network of the European corporate elite. Under investigation are the largest 300 stock listed firms in Europe and their directors, in 2005 and 2010. Our analysis of this original dataset shows that the network of board interlocks has increased. The corporate elite network is robust in the wake of significant crisis. This suggests that the corporate elite in Europe use board networks to organise business scan, and that they increasingly do so at the European level. Whereas the European political elite was unable to counter the financial crisis by a common European approach, Europe is a *fait accompli* for the corporate elite. An analysis of the robustness of the network, its core, the central directors and the political geography reveal that nevertheless corporate Europe remains the playground of a few, heavily centred in the founding nations of the European Union.

C4. Hierarchy and Knowledge Formation – Saturday, June 18, 9:00am-10:30am

Social Network Hierarchy and Rational Group Decision Making: An Experimental Study of the Conjunction Fallacy

Sean Richey, Georgia State University

Sarah Brosnan, Georgia State University

We test the influence of social hierarchy in political discussion with an experiment. We examine whether hierarchy is detrimental to group decision-making by using Tversky and Kahneman's (1983) logic question that tests the conjunction fallacy. We seek to determine whether the beneficial impact of group decision-making holds in hierarchical groups. To do so, we randomly assigned 256 participants to zero-history groups of five discussants. Two thirds of these groups had one member randomly assigned to be the group's leader, while the remaining groups had no leader. We find that groups with leaders conform to their leader's beliefs. If the leader was able to answer correctly the conjunction fallacy question, then group members are also more likely to resolve the conjunction fallacy. In groups where the leader was incorrect, group members are more likely to incorrectly answer. Thus, group decision making is benefited by hierarchy when the leader is correct, but harmed when the group leader is incorrect.

Great Lakes Climate Change Stakeholder Participation in Policy Events and Documents: An Analysis of Two-mode networks

I-Chen Chen, Michigan State University

Kenneth Frank, Michigan State University

Maria Lemos, Michigan State University

Scott Kalafatis, Michigan State University

Henry Renee, Michigan State University

Recent work on the knowledge formation of climate change suggests that the set of ideas one holds to be true is influenced by the group of people who interacts with the same social contexts and by the views of authorities

recognized by the group. From knowledge formation to political action, the mechanism not only depends upon participants' ability to integrate, but to cooperate with the public interests, policy makers, and other scientists of the verity of these claims. This study explores how stakeholders in Great Lakes climate change access environmental knowledge in their networks and how that affects their decision-making. In particular, the networks are defined by others who participate in common knowledge building experiences, public policy conferences and the writing of public documents. We employ two mode network analyses to identify clusters of stakeholders who participate in similar sets of events (Field et al., 2006; Frank et al., 2008), and we map the interactions between actor roles (scientist, policy makers, government agencies) and the focal experiences for knowledge formation (public policy events and documents) to understand how participants form their knowledge about climate change and cooperate with other scientists, governmental/ non-governmental agencies, local/ international policy maker to construct scientific consensus. Results indicate that government agencies and academics co-participate in events, but the two groups wrote papers separately. This suggests that government agents and academics are exposed to similar knowledge bases, but construct knowledge in different experiences. We also found evidence that regionally focused organizations participate in different events than national and state agencies, suggesting they access different forms of knowledge.

D4. Network Influence and Individual Decision-making – Saturday, June 18, 9:00am-10:30am

Networks as Determinants of Voter Behavior and their Implication for Government Capture and Accountability: A Comparative Analysis Based on Cross-Country Estimations of Spatial Voting Models in Poland and Slovakia

Christian Henning, University of Kiel

Svetlana Petri, University of Kiel

Laura Seide, University of Kiel

In political theory electoral competition is understood as a fundamental democratic mechanism to guarantee that governmental policies reflect society's interest. In reality, however, electoral competition is often restricted and hence, leads to biased policy outcomes. Basically, policy biases result from two major mechanisms: government capture and a lack of governmental accountability. The latter corresponds to the fact that elected politicians have not sufficient electoral incentives to implement policies benefiting socio-economic groups they are representing, but rather serve their self-interests, while the former corresponds to the fact that electoral completion is bias in favor of specific interests, i.e. government implements special interest politics. Microeconomic foundation of both phenomena is inherent in voter behavior. Accordingly, we estimate a probabilistic voter model, where voters have mixed motivations to vote. On the one hand voters are interested in policy outcomes, i.e. vote policy-oriented, while on the other hand voters vote expressively, i.e. vote according to their ideological preferences for various parties not related to party platforms. Accordingly, the higher the weight for expressive voting in a society the lower governmental accountability, i.e. the less elected government has an incentive to implement policies serving society's needs. Moreover, the more the importance of expressive voting varies across socio-economic groups the more biased are governmental policies in favor of special interest groups. In this paper we derive a theoretical model, where voter's relative weight for expressive voting depends on his information status. Moreover, the information status depends on voters EGO-centric network structures, i.e. density and network size. We test our theory estimating a probabilistic voting model for Poland and Slovakia using own election survey data. In particular, to be able to deal with potential heterogeneity we estimate a mixed logit and a latent class model. Based on estimation results we are able to calculate for country and group-specific relative weights of the policy-oriented and the expressive voting motives, respectively, which have direct implications for governmental accountability and capture. Especially, based on estimation results of the latent class model we are able to identify the relative importance of EGO-centric network structures as well as personal characteristics, e.g. age, gender, education income, and institutional factors such as membership in stakeholder organizations determining the relative importance of the two motives for observed voting behavior.

A Nonlinear Model of Decision Making in Small Social Networks

Michael Gabbay, University of Washington

Arindam Das, University of Washington

We model group decision making as an opinion change process occurring over a network. An individual's opinion concerning a policy under debate is taken to evolve as the result of the interplay between his ideological

predispositions and the influence of the other group members with which he communicates. The “self-bias force” is taken to be a linear force which tends to restore one’s opinion back towards one’s ideological bias. The “group influence force” is taken to be a pairwise nonlinear coupling which acts to bring opinions closer together but wanes for high opinion discrepancies. The model is motivated by social psychology theories on attitude change and cognitively-based approaches to foreign policy decision making. In the linear limit, it can be shown to correspond with Friedkin and Johnsen’s social influence network theory. We show how the model exhibits sharp transitions between equilibrium solutions arising from its nonlinear nature and we present results regarding the interaction of network density, network topology, and initial disagreement level upon consensus formation. The application of the model to decision making by political elites is discussed. We also describe an ongoing experimental effort to test the model predictions concerning decision making outcomes for different network structures and initial disagreement levels.

From Adoption to Beliefs: Paradigms of Influence in Networked Environments

Scott Helfstein, United States Military Academy

Strategic messaging is crucial in the current fight against extremism, especially in active counterinsurgency campaigns. Historically, the strategy underlying information campaigns draws from US experience in mass media and marketing theory. Rather than employing strategies conducive to success in technologically connected media oriented societies, the US needs to develop strategies for information operations in tribal cultures based on connections rather than mass media and communications technology. Understanding how existing social or political network structures can help convey legitimacy and maximize message saturation is a first step. The question motivating this research is simple: what is the best strategy to facilitate message transmission and resonance when relying on existing legitimate social structures? This project offers a computational model integrating networked social structure with Bayesian style learning to test optimal messaging strategy such as which part of the network to target for optimal saturation and how disagreeable the message can be while still achieving resonance. For example, is it better to target well-connected central leaders with a disagreeable message or to target a peripheral actor more predisposed to the content? Can messages targeting the periphery gain legitimacy by moving around central actors, or is legitimacy tied to connectedness?

E1. Media coverage and semantic networks – Saturday, June 18, 9:00am-10:30am

Bias in Social and Mainstream Media

Yu-Ru Lin, Northeastern University

James P. Bagrow, Northeastern University

David Lazer, Northeastern University and Harvard University

The extent of media bias determines the information available to the public and can affect public opinion and decision-making. Social media, such as blogs, powered by the growth of the Internet and related technologies, is envisioned as a form of grassroots journalism that blurs the line between producers and consumers and changes how information and opinions are distributed. They are often seen as democratic entities that allow more voices to be heard than the conventional mainstream media as well as a balancing force against the arguably slanted mainstream media. Do social media exhibit more or less bias than mainstream media and, if so, to what extent? A systematic comparison between social and mainstream media is critical but challenging due to the scale and dynamic nature of modern communication. Our major contribution is that we propose empirical measures to quantify the extent and dynamics of “bias” in mainstream and social media (hereafter referred to as “News” and “Blogs”, respectively). Our measurements are not normative judgment, but examine bias by looking at the attributes of those being mentioned, against a null model of “unbiased” coverage. We focus on the number of times a member of the 111th US congress was “referenced”, and study the distribution and dynamics of the references within a large set of media outlets. We consider “the unbiased” as a configurable baseline distribution and measure how the observed coverage deviates from this baseline, with the measurement uncertainty of observations taken into account. We demonstrate bias measures for slants in favor of specific political parties, popular front-runners, or certain geographical regions. Using these measures to examine newly collected data, we have observed distinct characteristics of how News and Blogs cover the US congress. Our analysis of party and ideological bias indicates that Blogs are not significantly less slanted than News. However, their slant orientations are more sensitive to exogenous factors such as national elections. In addition, blogs’ interests are less concentrated on particular front-runners or regions than news outlets. While our measures are independent of content, we further investigate two aspects of the content related to our measures: the hyperlinks embedded in articles and sentiments detected from the articles. The hyperlink patterns suggest that

outlets with a Democrat-slant (D-slant for short) are more likely to cite each other than outlets with a Republican-slant (R-slant). The sentiment analysis suggests there is a weak correlation between negative sentiments and our measures. To better understand the distinctive slant structures between the two media, we propose to use a simple “wealth allotment” model to explain how legislators gain references from different media. The results about blog media’s inclination to a rich-get-richer mechanism indicates they are more likely to echo what others have mentioned. This observation does not contradict our measures of bias -- compared with news media, blogs are weaker adherents to particular parties, front-runners or regions but are more susceptible to the network and exogenous factors. This simple generative model helps reveal differences in the process of coverage selection between the two media.

Semantic Networks in the Political Blogosphere

Nicole M. Pierski, University of California, Irvine

Carter T. Butts, University of California, Irvine

The 2004 US Presidential election cycle saw blogs become an institutionally recognized facet of the American political media. A select group of partisan conservative and liberal blog authors were for the first time credentialed as media members by the Republican and Democratic parties, respectively, and allowed to attend and cover the Republican National Convention (RNC) and Democratic National Convention (DNC). Previous scholarship regarding the political coverage by blog authors during this election cycle found that distinct patterns exist in the amount and variety of topics covered by partisan blogs. However, a network analysis of the RNC and DNC-credentialed blogs’ content has not previously been used to explore these claims. Using a longitudinal sample of all DNC and RNC credentialed blogs (Butts and Cross 2009) the coverage of major campaign issues, including national security and foreign policy, by Democratic and Republican partisan blogs during both the RNC and DNC is examined. In addition, the use of text-mining and networking tool Automap is employed and the resulting semantic and conceptual networks within the content of the RNC and DNC blogs are discussed.

Networks and Language in the 2010 Election

Avishay Livne, University of Michigan

Matthew Simmons, University of Michigan

W. Abraham Gong, University of Michigan,

Eytan Adar, University of Michigan

Lada Adamic, University of Michigan

The midterm (2010) election in the U.S. presented a unique opportunity to study the online social media strategy of various political groups. Although candidates had previously leveraged social media, the prevalence of use during this election allows us to study a significant percentage of candidates and a novel glimpse into their networks and messaging. In combination, the networks and associated content reflect positioning of candidates both structurally and in framing in relation to other politicians. In our work, we study the use of Twitter by House, Senate and gubernatorial candidates during the midterm (2010) elections in the U.S. Our data includes almost 700 candidates and over 460k tweets that they produced in the 3.5 years leading to the elections. We utilize graph and text mining techniques to analyze differences between Democrats, Republicans and Tea Party candidates, and suggest a novel use of language modeling for estimating content cohesiveness. Our findings show significant differences in the usage patterns of social media, and suggest conservative candidates used this medium more effectively, conveying a coherent message and maintaining a dense graph of connections. Despite the lack of party leadership, we find Tea Party members display both structural and language-based cohesiveness. Finally, we investigate the relation between network structure, content and election results by creating a proof-of-concept model that extends incumbency models to predict candidate victory.

Saturday, June 18, 11:00am-12:30pm

A5. Digital Networks – Saturday, June 18, 11:00am-12:30pm

Network Mechanisms and the Collapse of an Online Community

Sandra Gonzalez-Bailon, University of Oxford

Georgios Paltoglou, University of Wolverhampton

This paper tracks the growth and decline of an online community created for the discussion of political news and current affairs. The forum, hosted and moderated by a large broadcasting corporation, opened in June 2005 but, after a few months of increasing activity, it entered into a phase of attrition that led to its final closure in September 2009. We track activity levels over time and reconstruct the discussion networks that users form with their replies on a monthly basis. This community, as many others online, is formed by a small core of regulars, who contribute for longer periods of time and with a higher number of messages, and a larger periphery of low committed users. The phase of decline started because peripheral users stopped flowing in and the regulars began to drop out. The evolution of the reply networks shows that as the community declines, so do the levels of reciprocity and assortativeness (degree correlation). We also find that the emotional content of the discussions becomes more positive over time, suggesting less disagreement and potential for argumentation. We analyse the network dynamics vis-a-vis the sentiment conveyed by the messages to uncover the reasons that precipitated the collapse of this community. The emotional load of the messages gives insight into the motivations that drive users to participate or react to other users' participation; the analysis of their reply networks points to their main sources of social feedback and to why that signal weakened over time. Understanding what makes online communities work and fail is important not only for the site hosting the communities (i.e. success brings a bigger audience) but also for the larger consequences that these communities generate: they create a public space where people gather to informally exchange opinions and ideas, engage in casual (but consequential) talk and become more involved with politics and current affairs. Online communities that fail to take off are missed opportunities to strengthen the links of casual association, which is an important component of civic life.

The Social Structure of Political Echo Chambers: How Cognitive Differences Lead to Asymmetries in Online Political Communication Networks

Andrei Boutyline, University of California, Berkeley

Robb Willer, University of California, Berkeley

We investigate the possibility that people with different political orientations may exhibit different levels of *political homophily*, the tendency to preferentially interact with those who share one's political beliefs. Research in political psychology documents systematic differences across the political spectrum in the aversion to unknown, ambiguous, uncertain or threatening situations, and in the desire to reach cognitive closure. These studies suggest that such tendencies are generally more pronounced in individuals on the ideological sides than at the center, and also among individuals on the political right than on the left. We reason that individuals with greater aversion to ambiguous or uncertain stimuli should be more averse to dissent and disagreement, causing them to have stronger preferences for interaction with others who share their views. Thus, we predict that individuals with ideologies (1) further from the center and (2) further to the right should also exhibit greater levels of political homophily. We test our hypotheses on a dataset of 234,042 personal networks belonging to American users of Twitter, which is an online communications network used by over 6% of adult Americans (Pew 2010). We find that individuals who follow legislators or think tanks with more ideological or more conservative views tend to be connected with one another at higher rates than followers of equivalent moderate or liberal political figures and organizations. These differences persist for both small and large personal networks, for followers of both popular and less popular politicians, and for both old and new users of Twitter. The magnitude of the difference is especially large when comparing networks of those who follow legislators on the left with those on the right. We conclude by discussing how these higher levels of political homophily may result in networks that are better able to sustain large-scale diffusions of social influence and political mobilization.

B5. The Social Life of Congress – Saturday, June 18, 11am-12:30pm

Living Together and Voting Together: The Impact of Congressional Boardinghouse Networks on Voting Patterns, 1815-1841

Patrick Bergemann, Stanford University

Paolo Parigi, Stanford University

When the capital of the United States moved to Washington, DC in 1800, there was little existing infrastructure. Due to a dearth of individual residences, most Congressmen lived together in boardinghouses scattered around the city. These boardinghouses were the epicenter of social activity in the capital, and co-residents shared meals together. Importantly, the composition of these boardinghouses was heterogeneous by party and state. Using a unique dataset detailing where each Congressman lived during each session of Congress from 1815-1841, we are in the process of analyzing to what extent the boardinghouses influenced voting behavior, along with the impact boardinghouse residency had on the creation of the 2nd party system in the 1820s. We have used several different techniques to analyze the data thus far. Using WNOMINATE to plot the Congressmen of each session in ideological space, we have compared the placement of the members of each boardinghouse in this space with simulated boardinghouses, and have found that actual boardinghouse members are clustered more tightly together than would be expected at random. Although the WNOMINATE results suggest that members of the same boardinghouse voted similarly, they do nothing to establish the causal mechanism driving this behavior. In order to establish whether self-selection or social influence led to these findings, we analyzed the level of agreement on rollcall votes in each boardinghouse over time for each session of Congress. If the levels of agreement increased over time within each boardinghouse, such evidence would indicate that fellow members were influencing each other's votes. However, we have found that the slopes of voting agreement trends are indistinguishable from zero, that the boardinghouses do not appear to have a universal effect on agreement among their members. As a follow-up, we classified boardinghouses as either "hotels" or "community centers," where hotels are defined as boardinghouses with a great deal of turnover from session to session, and community centers are boardinghouses where people tend to stay, that perhaps were viewed as more social environments. We have found no difference between these two types of boardinghouses in terms of convergence in agreement on rollcalls. Our current stage of analysis is to examine the Congressmen as heterogeneous agents. We are now in the process of examining those Congressmen who were either especially bipartisan in their voting patterns or voted against their party or region most frequently. We are analyzing whether or not they were systematically located in particular types of boardinghouses – such as if the majority of a boardinghouse being from a different region of the country corresponds with greater bipartisanship for an individual voter. We are in the process of conducting analysis in order to determine the relative impact of individual variables (such as profession, state, etc.) versus boardinghouse variables (e.g. percentage of boardinghouse in the same party as the individual, percentage in the same profession, etc.) on the level of bipartisan voting.

Socializing in Session: Congressional Networks and Legislative Behavior

Jon Rogowski, University of Chicago

Betsy Sinclair, University of Chicago

In recent years, congressional networks have received a resurgence of theoretical and empirical interest from scholars seeking to explain legislative behavior. This perspective, attributed most commonly to David Truman and Donald Matthews, emphasizes the importance of social relations between members of Congress for legislative decision-making and stands in stark contrast to dominant approaches to the study of legislative behavior that focus on the ways in which policy preferences, party membership, and constituency interests drive these choices. However, existing research that investigates the importance of social ties for legislative behavior suffers from two general classes of limitations. First, current literature does not account for shared preferences between legislators that may explain patterns of similar behavior that are claimed as "network effects." Second, existing analyses condition on post-treatment variables that are measured after legislators are embedded in congressional networks. In this paper we address both of these issues and report results from the most robust test to date of the impact of explicitly social factors on legislative behavior. We use the freshmen House office lottery as an instrumental variable for office proximity, a proxy for social interactions between legislators. We also use candidate surveys administered by Project Vote Smart prior to each legislator's term in office as a pre-treatment measure of each legislator's ideology. We demonstrate that while pairs of legislators cosponsor the same bills and cast similar roll call votes at higher rates when they have shared office locations (offices located on the same floor of same building), proper identification of these results demonstrates that social effects in Congress are substantively small. This study is the first to precisely identify the effects of explicitly social factors

on legislative behavior, and sheds new light on the ways in which influence is – and is not – transmitted in the policymaking process.

C5. Peace and Conflict in Networks – Saturday, June 18, 11:00am-12:30pm

Terrorist Networks, Network Energy and Node Removal: A New Measure of Centrality Based on Laplacian Energy

Robert D Duval, West Virginia University

Arian Spahiu, West Virginia University

Edgar Fuller, West Virginia University

Cun-Quan Zhang, West Virginia University

We propose a novel centrality measure for networks — Laplacian centrality — to provide a general framework for the centrality of a vertex, based on the idea that the importance (or centrality) of a vertex is related to the ability of the network to respond to the deactivation or removal of that vertex from the network. In particular, the Laplacian centrality of a vertex is defined as the relative drop of Laplacian energy caused by the deactivation of this vertex. The Laplacian energy of network G with n vertices is calculated and is based on the eigenvalue of the Laplacian or admittance matrix of G . The validity and robustness of this new measure are illustrated on two different terrorist social network data sets, and is compared with other standard centrality measures. The networks are those involved in the 2002 Bali nightclub bombing and the 9/11 hijacker network and provide examples that demonstrate the utility of the new measure. In addition, a consensus analysis is provided indicating that the Laplacian centrality measure provides the best overall measure in terms of its rankings of the importance of vertices. The nature of computation of the centrality score suggests that it may have desirable operational characteristics as well.

A Kernel Analysis of Kant's Conjecture

Steven W. Zucker, Yale University

Minh Tam Le, Yale University

Bruce Russett, Yale University

John Sweeney, Yale University

In modern terms, Kant conjectured that lasting peace among nations depends on three factors: (1) democratic form of government, (2) economic interdependence and (3) shared memberships in intergovernmental organizations (IGOs). We seek to analyze this conjecture using non-linear dimensionality reduction. Put briefly, we seek to understand countries by the IGOs to which they belong, and IGOs by the countries that belong to them. Thus countries are represented by a high-dimensional vector of memberships, and organizations by a high-dimensional vector of countries. We seek to uncover the basic, low-dimensional organization implicit in country-organization memberships, calculate its consistency with economic interdependence and evaluate its predictive power for conflicts.

“Clubs of Clubs”: A Networks Approach to the Logic of IGO Membership

Yonatan Lupu, University of California, San Diego

Brian Greenhill, Dartmouth College

Political scientists are paying increasing attention to the effects of shared membership in intergovernmental organizations (IGOs) on international politics. A number of studies have examined the role shared membership in IGOs has on outcomes such as conflict, trade, interest convergence and the diffusion of human rights norms. More recently, scholars have turned their attention to explaining the variation that exists in the extent to which states join IGOs in the first place. In this paper, we advance this literature by adopting a network theoretic perspective of IGO membership. Rather than considering IGO membership as a collection of dyadic ties between states, we consider the ways in which the IGO network can be conceptualized as a number of distinct communities of states and IGOs. We posit that accounting for membership in these communities allows IR scholars adopt a more nuanced understanding of the causes and effects of IGO membership. Our argument is that, depending on the logic of IGO joining, we would expect these “clubs of clubs” or IGO communities to be defined on differing grounds. In our empirical analysis, we use the network analytic tool of modularity maximization to detect the IGO communities in the global network for the period 1950-2000. We describe how the IGO communities have developed over time and test the extent to which factors such as development, geography, regime type, alliance ties, language, religion and colonial ties explain the IGO community structure.

D5. Norms, Culture and Cooperation – Saturday, June 18, 11:00am-12:30pm

Organizations and the Evolution of Cooperation

Danielle Jung, University of California, San Diego

David Lake, University of California, San Diego

The Repeated Prisoner's Dilemma (RPD) is a metaphor for the difficulties of achieving cooperation in social life. Even recognizing gains from mutual cooperation, the best strategy is to seek to exploit others or to defend against exploitation. In this world, as Hobbes envisioned, life is "solitary, poor, nasty, brutish, and short." This bleak view of the prospects for cooperation was transformed by new understandings of the PD, particularly the evolutionary superiority of the tit-for-tat strategy. The theoretical discovery of the possibility of "spontaneous order" affirmed long held liberal or progressive beliefs on the potential for human progress. We look at how organizations alter the evolution of cooperation. We present results from an agent-based model (ABM) of the RPD in which agents interact in a "market," equivalent to the non-organizational interactions within the standard RPD, or have the option of interacting within networks or hierarchies. This is, to our knowledge, the first attempt to study effects of alternative organizations within a RPD framework.

Dynamic Networks of Political Culture: A Relational Approach to Ronald Inglehart's Postmaterialist Thesis

Lorien Jasny, University of California, Irvine

Much of the field of political culture is devoted to cross-national studies. Since the promise of the paradigm is that the political culture affects political and economic outcomes, the cross national comparative framework permits the development and testing of theories along these lines. The major work in cross national political culture is that of Ronald Inglehart's (with others) work with the World Values Survey. Inglehart's addition to this body of work on political culture is his ability to develop and test models for the changes in responses to surveys over time on such a grand scale (Inglehart and Baker 2000; Inglehart and Welzel 2005). I use a framework of propositional, logical statements to relate beliefs across a population. The propositional statements relate pairs of variables using a bounded set of logical terms: if, then, or and not. These propositional relationships are determined by the patterns of co-association of two variables. The set of all such pairwise relationships on a given set of variables constructs a propositional system. The system can be viewed as a network, where the variables form the vertex set and the set of relationships among them are different types of edges. Analyzing the propositional structures of the different countries' survey responses addresses a different question than the correlation analysis performed by Inglehart. Instead of measuring how much of the population responds positively to a question, the method looks at whether those who do answer positively also significantly answer certain ways to other questions. The different propositional structures of the countries concerned can be compared using network methods. This exploits the promise of propositional structures seen by multiple authors (Grofman and Hyman 1974). Multiple distance measures, variants of hamming distances, can compare the structures and produce distance matrices. Two dimensional projections of these matrices can be compared to the similar presentations in Inglehart's work, thus permitting a comparison of methods. The further advantage of propositional structures is that similar countries' networks can easily be examined for which propositional relationships they have in common, and which are different. This should give a deeper understanding of how countries are similar and different in the patterns of responses.

On the Importance of Network Structure in the Evolution of Social Norms

David Hendry, University of Illinois

In a previous era, whites in most social circles in the United States had to demonstrate a belief in the superiority of whites over other races in order to avoid social censure. Today the opposite is true. What explains large-scale shifts in the prevailing social norms of a society? Conceptualizing a change in social norms as a movement from one social equilibrium to another, this paper argues that it is useful and appropriate to consider the emergence, replacement, and persistence of social norms as processes of cultural evolution. The selection mechanism of evolutionary theory requires the maintenance of variability of traits in order that those leading to greater success in particular environments will flourish while those leading to less success in those same environments will recede. In biological evolution, this is accomplished by random genetic mutation. In cultural evolution, on the other hand, the adoption of traits often results from the deliberate selection of characteristics via imitation, learning, and innovation, and variability of traits is maintained due to the network structure of social

relationships. Networks of social interactions therefore allow cultural evolutionary selection to occur and act as important constraints on the evolutionary process. Employing principles of evolutionary graph theory with the added component of purposeful selection into networked relationships, I develop a model of the coevolution of network structure and individual preferences that explains the movement from one dominant social norm to another. Specifically, individual preferences develop and become strengthened through positive reinforcement via social interactions. Through homophilic selection into small groups or cliques, within-group reinforcement may allow preferences that are incongruent with the prevailing norms of society at large to persist over long time spans. If exogenous shocks then alter the system of social connections (for instance, by the creation of an institution that forces non-homophilic interactions), the system of preference reinforcement changes as well. Social success in the new system of relationships may involve adherence to a different prevailing norm in small social groups. If this is true for a sufficient proportion of social interactions, cultural evolutionary selection will begin to favor the new norm, which then establishes a set of conditions conducive to norm transition. After developing these ideas formally and deriving empirical implications, I apply the model to the case of changes in norms with respect to racial equality in multiracial societies.

E2. Legislative Organisation & Policy Outcomes – Saturday, June 18, 9:00am-10:30am

Social Networks and Power in Legislative Bargaining: A Socially Embedded Legislative Bargaining Game

Christian Henning, University of Kiel

Carsten Struve, University of Kiel

This paper derives a political power index within the framework of a socially embedded legislative bargaining game. Legislative bargaining is model applying a modified legislative bargaining model of a Baron-Ferejohn type, where legislators' policy preferences are endogenously determined in a political communication process. Political communication is organized in policy networks, where network structures determine social influence of individual legislators on other legislators' preferences. Social influence results from legislators' fundamental uncertainty regarding the impact of various policies on the state of the world, i.e. the true political technology. Based on the overall equilibrium of the legislative bargaining model a generalized political power index can be computed for each individual legislator. Overall, the political power index includes three distinct components of power: constitutional rules as formal and policy networks as informal political institutions as well as legislators' fundamental preferences regarding the state of the world. Formally, the derived power index can be interpreted as a generalization of both the classical cooperative voting power indices focusing only on constitutional rules and the noncooperative legislative bargaining model of Baron and Ferejohn focusing on constitutional rules and policy preferences, but neglecting social interaction structures among legislators. Pars pro toto the generalized political power index is applied to the Common Agricultural Policy of the European Union.

Could Legislatures be Structured to Make Pareto Optimal Policy Decisions?

Sol Erdman, Center for Collaborative Democracy

Ideological adversaries outside government sometimes reach Pareto optimal decisions on issues that government officials cannot resolve. These episodes suggest ways to structure legislatures to reach equivalent results. Background: A federal agency dealing with a controversial issue may fear that any regulation it proposes will precipitate lawsuits blocking the plan. If so, under the Negotiated Rule-making Act, the agency can invite each interest group involved to appoint a spokesperson. The representatives are then told that if they can negotiate a regulation they all support, the agency will likely adopt it. Under these conditions, long-time opponents have agreed on regulations for controversial issues such as nuclear wastes, student loans, food safety, public housing and, recently, fuel economy standards for cars and trucks. These results have presumably been more Pareto optimal than what the agencies might have proposed. How has this come about? Our hypothesis: 1) Each representative: a) had a clear set of priorities to pursue, and b) felt unrelenting pressure to advance those priorities. 2) The representatives collectively spoke for all the relevant interests. 3) Each representative's most practical way to make progress for his/her own camp was to negotiate a deal that would yield the greatest total benefits at the least practical cost and, then, parcel out the costs and benefits in a way that all sides could support. 4) Each representative could then explain to others in his/her camp how that deal with their long-time adversaries would advance their priorities further than other strategies would. In effect, the feedback loops between representatives and constituents were significantly clearer than in most policy deliberations. By contrast, a typical American legislator represents people from virtually every age group, income level, family situation and occupational category. Therefore: a) the input on major issues can be incoherent; b) to justify any major policy decision would require different reasoning for each socio-economic group; c) to stay in office, a

typical legislator just has to convince 50.1 percent of voters that his/her main opponent would undercut their interests more, a message far easier to convey than b) above. How, then, might legislatures be structured to reach more Pareto optimal decisions, as in negotiated rule-makings? Our hypothesis: A. Organize elections so that each legislator: 1) speaks for a group of constituents who share similar political priorities; 2) has a direct channel of communication with constituents to explain how his/her agreements meet as much of their priorities as they can realistically get; 3) competes for reelection against multiple candidates who share similar priorities. B. Organize legislative committees in such a way that each member: 1) speaks for a group of lawmakers who share similar priorities in the committee's policy area; 2) meets regularly with those lawmakers to explain how his agreements achieve as much of their priorities as they can realistically get; 3) competes regularly for reelection to the committee against multiple lawmakers who share similar priorities. Our paper will spell out the details of the above and plans for testing this hypothesis.

Saturday, June 18, 2:00pm-4:00pm

A6. Coordination and Cooperation – Saturday, June 18, 2:00pm-4:00pm

QUIT-for-TAT and the Endogenous Structure of Cooperation in Voluntary Dilemmas

John Scholz, Florida State University

T.K. Ahn, Seoul National University

The ability to select and reject partners creates a powerful means of supporting cooperation in the voluntary dilemma in which actors can choose partners for playing the prisoner's dilemma game. The cooperative quit-for-tat (QFT) strategy that continues play with cooperators but not with defectors can maintain cooperation in voluntary dilemmas by clustering together and excluding nasty and exploitative strategies. We develop a QFT model for the dynamics and structure of mutual cooperation and test its implications in a laboratory experiment involving 168 subjects in 12 sessions of 20 period voluntary dilemmas. The results confirm that the simple QFT model accounts for observed dynamics and structure of cooperative relationships, and that high-scoring subjects follow strategies that resemble QFT. We discuss the relative importance of niceness, forgiveness, and optimistic search in accounting for the success of QFT strategies, and note that the observed clustering of cooperators in this experimental setting is an artifact rather than a necessary support for cooperation. These results underscore the need to understand the dynamics of network formation to understand the relationship between clustering and cooperation.

Costly Coordination: The Effect of Network Structure on Coordination

Nicholas Weller, University of Southern California

Mathew McCubbins, University of Southern California

Coordination is a central concern in political settings in which actors must agree on which action to take, which is often required in the adoption of international or domestic policy. Standard models of decentralized coordination suggest that it should be relatively easy to achieve as long as communication is allowed. However, the basic models do not account for either the structure of information between actors or the presence of costs for taking an action. In this paper we model the information structure using networks in which actors are nodes and edges represent an informational connection between two nodes. We demonstrate experimentally that when it is costly for actors to take an action the network structure can significantly affect the group's ability to solve a coordination task. In particular we find that greater number of connections or the presence of highly connected nodes can ameliorate the effect of costs on coordination. These results can shed light on the way that institutions can create the conditions for successful coordination and problem solving.

Networking on the Internet: How the Climate Change Movement Connects People and Organizations through the Internet

Dana R. Fisher, University of Maryland

Michael T. Heaney, University of Michigan

Social movements are increasingly turning to the Internet as a means of mobilizing people for collective action. While it is well known that movements "use the Internet", little is known about how they do so. This research examines the factors that determine which individuals are more likely to be mobilized through the Internet than through other media and which factors affect the success of organizations of reaching people through the Internet. We examine the case of Step it Up, an organization devoted exclusively to orchestrating web-based day of action dedicated to stopping climate change. We conducted surveys of participants of Step in Up actions held in November 2007 in New York, NY; Washington, DC; Chicago, IL; Bloomington, IN; Indianapolis, IN; and Long Beach, CA. The surveys asked participants to report the sources of information that they used in planning to attend the actions. We estimate a two-mode Exponential Random Graph Model (ERGM) that predicts which people were connected to which organizational web sites. We examined the determinants of network ties both on the individual mode and the organizational mode. On the individual mode, we examined the effect of distance traveled, political party membership, participation in organizing the action, identification with the goals of the action, political ideology, sex, age, and level of education. On the organizational mode, we examined whether the organization was exclusively Internet-based, whether it was an environmental organization, whether it was a mass media organization, whether organization allows individual membership, and whether it is local based. The

results show that distance traveled, political party membership, participation in organizing, identification with goals, and age are significant factors predicting the individual mode. On the organizational mode, organizations were more successful if they were web-based, environmental, media, and local. These results document the process of network formation through the Internet and link it to its social, political, and organizational determinants. They highlight the mechanisms through which social capital is created on the Internet.

B6. Political Polarization – Saturday, June 18, 2:00pm-4:00pm

Network Polarization: A general index and applications

Zeev Maoz, University of California, Davis

A general index of network polarization is introduced and applied to a number of political settings, including the US Senate, European political systems, and international relations. The Network Polarization Index (NPI) is based on the structure of groups induced by a given network (and applies to all types of groups--including cliques, blocks, clusters, and communities) and the interrelations between groups. I use a number of axioms typically associated with the concept of polarization (e.g., Duclos, Esteban, and Ray 2004) and prove that the NPI satisfies these axioms as well as two additional axioms I specify. I show the relationship between the NPI and other measures of general network structure. I then illustrate the properties of the NPI via both a Monte Carlo simulation and a number of applications. I show that the polarization of a party system has an impact on cabinet duration in European parliaments and that international network polarization has a significant effect on the magnitude of war in the international system.

Linking Polarization: A Social Network Analysis of Interest Groups and Partisan Behavior in the House

Scott D. McClurg, Southern Illinois University at Carbondale

Jeremy Phillips, Southern Illinois University at Carbondale

This project looks at the social networks of interest groups to explain polarization in the House. Although the rise of ideologically motivated interests has been identified as a cause behind the rising tide of partisan polarization in the American legislature (Fiorina 2000), very little effort has been devoted to studying the role that different types of interest groups play in creating legislative coalitions with different partisan complexity. To the extent that interest groups link legislators together through their contributions, it is possible for them to affect the partisan nature of legislative politics. If Fiorina's argument has merit, we should find that there are differences in the networks created by "traditional" interest groups when compared to the networks based on contribution behavior of the newer brand of public interest groups that are a more important part of Washington politics in recent decades (Berry 1996). Conversely, if partisan behavior is more symptomatic of changing behavior by all groups these networks should be very similar in shape and form. We examine hypotheses related to this argument by examining the structure of interest group networks in the domain of health policy and environmental regulation. In each of these policy areas we use public information to identify the twenty best funded groups with active legislative interests that made contributions to members of the House in the 2006 electoral cycle. From this network, we examine whether interest group contributions created a network structure characterized most strongly by partisan homophily -- a measure of partisan polarization -- or by other factors that influence legislative behavior, such as the tenure and committee power of legislators. To supplement this aggregate analysis, we also 1) analyze those aspects of the network structured by legislative contributions of different types of groups (i.e., following the traditional-public interest distinction) and 2) examine the impact of network position on roll call votes in these policy areas. The contribution of this research will be to demonstrate the importance of linking strategies for networks in affecting legislative policy making, particularly with respect to the marked partisanship of the last few decades.

Partisanship without Parties: A Network Analysis of Polarization in the Nebraska State Legislature

Seth E. Masket, University of Denver

Boris Shor, University of Chicago

Despite the officially non-partisan structure of Nebraska's state legislature, the chamber has been polarizing in recent years, and is currently more polarized than 19 other state legislative chambers. This paper combines qualitative evidence and network analysis to investigate just how this has happened. Interviews pinpoint the 2004-2006 time period as key to the growth of partisanship; it was then that term limits started turning out state legislators, creating new opportunities for recruitment by the official parties. Social network analysis of elite

campaign donations also shows this time period to be a key point in the polarization of campaign money. An examination of the modularity of campaign donations suggests that major donors were bipartisan in their giving patterns in the recent past but have become strict partisans in recent years. Nebraska's statehouse is polarizing, it seems, because the people who send legislators there are themselves becoming more partisan.

C6. Legal Networks – Saturday, June 18, 2:00pm-4:00pm

The Evolution and Formation of Amicus Curiae Networks

Janet M. Box-Steffensmeier, Ohio State University

Dino P. Christenson, Boston University

It is common knowledge that interest groups use coalition strategies to exert influence. Yet, many questions remain about such coalitions. This paper sheds light on two age-old questions of interest group behavior: how have interest group coalition strategies changed over time; and which factors most determine whether interest groups work together? Utilizing a network measure of interest group coalitions based on cosigner status to United States Supreme Court amicus curiae, or friend of the court briefs, we illuminate the central players and overall characteristics of this dynamic network from 1930 to present-day. Trends in node-level network measures as well as global measures suggest that while a greater number of groups have entered the fray in recent years, large central players have acted continuously as coordination hubs for the bulk of them, leaving a disparate collection of organizations that work alone or within small dense groups at any given time. Furthermore, evidence abounds of mixed-strategies, wherein various repeat players employ different coalition strategies at different times. The paper concludes by simultaneously modeling the attribute homophily and latent clustering of the network during the first decade of the 21st century. We find assortative mixing of interest groups based on policy area, region, size, and other business characteristics, as well as a latent position clustering that resembles ideological extremism. The model ultimately suggests that interest groups are a part of a more complex system than can be garnered from business characteristics alone. Because the political ideology of all interest groups cannot be easily inferred, the latent clustering affords an unparalleled view of the political underpinnings of the full interest group amicus curiae network.

The Legal Issue Network: Network Analysis of Patent-related Amicus Briefs at the Court of Appeals for the Federal Circuit

Rihoko Kawai, National Institute of Informatics (Tokyo, Japan)

Rentaro Iida, Georgetown University

The research on interest group networks derived from amicus briefs at the Supreme court is growing (Box-Steffensmeier and Dino 2010; Hansford 2011; Iida 2010), but we still know a very little about those at lower courts. This paper is a first attempt to analyze networks among and across interest groups and attorneys within a specific policy area at lower courts. As Baum (2011) points out patent issues are one of the most "specialized" areas in judicial decision making. Many substantive legal decisions are made at lower courts as the decisions require a greater technical knowledge. We argue that having an advantageous network position has an even greater advantage in the issue area because the level of uncertainty surrounding decisions requires greater access to information. We have collected an original dataset on amicus briefing activities related to patent issues from 1980 to 2011 at the Court of Appeals for the Federal Circuit. Using the data, the paper examines whether having cross-cutting brokerage positions across different types of groups has an impact on success for the amicus. We identify relations among interest groups through co-signed briefs, and those among attorneys through coauthored briefs. Two dependent variables measure success, one as the rate at which court decisions are in favor of a particular group's amici and the other as the number of times court decisions mention those amici.

Networked Justice: A Mixed-Methods Analysis of Justice Reform Networks in Mexico

Matthew Ingram, University of Massachusetts, Dartmouth

How do legal institutions change in new democracies? More specifically, what are the origins of justice reforms in Mexico? Current research establishes that one of the main factors that explains successful legal reforms is the ideational orientation of actors internal to those institutions. That is, the ideas of judges matter not just for the decisions they make, as is commonly understood, but also for the shape of their home institutions. However, while we know ideas matter, we know little about the content of these ideas, how they are distributed among judges, or why or how some judges hold these ideas while others do not. This research fills these theoretical and

empirical gaps by (a) examining judges' opinions regarding recent high-profile reforms, and (b) leveraging quantitative and qualitative network analysis to explain how these opinions spread among judges. Drawing on diverse literatures in comparative law, judicial politics, socio-legal studies, and social network analysis, the paper examines how ideas about the proper role and shape of judicial institutions transfer among legal elites. The analysis draws on original, ego-centered data from a pilot survey of judges in two Mexican states, as well as personal interviews with and archival analysis of these judges, highlighting methodological insights in the multi-method identification of judicial networks and theoretical insights in the diffusion of ideas and the study of democratic institutions.

D6. Organizational Networks in Difficult Situations – Saturday, June 18, 2:00pm-4:00pm

Modeling the Dynamics of Emergent Networks: Collaboration and Mass Convergence in the Hurricane Katrina Disaster

Carter T. Butts, University of California, Irvine

Zack W. Almquist, University of California, Irvine

Modeling emergent networks, such as those arising from disruptive events such as disasters, poses both theoretical and methodological challenges. Such networks feature rapidly changing vertex sets and strong contextual effects, neither of which are currently well-studied in the social network literature. Here, we explore these issues via the application of an extended variant of Dynamic Network Logistic Regression to the network of organizational collaboration emerging during the initial response to the 2005 Hurricane Katrina disaster. Our findings suggest that (1) vertex set dynamics are a key component of network evolution (often driving other aspects of network structure), and (2) larger, system-level factors such as geography are also critical for accurate prediction of network structure. Implications of these findings for the prediction of organizational behavior during periods of mass convergence are also discussed.

The Effects of Corruption on Organizational Networks and Individual Behavior

Brandy Aven, Carnegie Mellon University

This study contrasts corrupt and non-corrupt projects within an organization to examine whether information type alters the way individuals mobilize to accomplish a goal. This study examines longitudinal email data taken from a corporation, where I couple qualitative coding techniques and social network analysis to parse information networks. The results of this multi-method study systematically show that the type of information communicated between organizational members affects both network characteristics and individual behavior. In the first study, I look at the topological implications of information type on large project. I find that in contrast to non-corrupt networks, corrupt networks are less connected, have more asymmetrical relations, and are comprised of weaker ties. These findings are supported by an individual-level study of members who participated in both the corrupt and non-corrupt projects from study 1. For these individuals, I analyze three dependent measures that are the egocentric analogues of the sociocentric measures used in the first study. The findings indicate that individuals systematically channel non-corrupt and corrupt information differently through their ego-networks. Individual's corrupt communications are significantly less symmetrical and less transitive than non-corrupt ones. In other words, individuals are respectively less likely to reciprocate and to introduce their alters when sharing corrupt information. Given these findings, it is clear that disaggregating networks by informational content presents new opportunities to better understand the link between social structure and individual behavior.

Formal and Informal Relationships: Their Effect on Organizational Behavior in High-Risk Systems

Ramiro Berardo, University of Arizona

Sabrina Cotta, University of Arizona

Network analysis in the study of public policy and management has quickly developed in the last decade. Earlier users of the approach focused on conceptual discussions of what networks are and how they should be measured, while later works incorporated a better developed empirical dimension. These initial works mostly dealt with measuring the information links among organizational actors in one-mode networks and observing how the structure of those links affected organizational behavior. More recently new work has been developed that explores in more detail two-mode networks where actors relate to each other only indirectly through their participation in common events or venues.