

Emma S. Spiro

CONTACT INFORMATION

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Irvine, California
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EDUCATION

University of California, Irvine, CA **Expected Completion 2013**
Ph.D. Candidate, Department of Sociology

Dissertation: Communication and Affective Dynamics During Disaster Response and Recovery: Methods and Analysis Utilizing Large-Scale Online Data, (Working Title)
Committee: Carter T. Butts (Chair), Katherine Faust, Padhraic Smyth

Examination Fields: Social Networks, Population and Demography

University of California, Irvine, CA **March 2011**
School of Social Sciences
M.A., Mathematical Behavioral Sciences

Thesis: Patterns of Coordination: Brokerage Roles in the Wake of Hurricane Katrina
Committee: Carter T. Butts, Katherine Faust, Yen-Sheng Chiang

Pomona College, Claremont, CA **September 2003 - May 2007**
B.A., Applied Mathematics
Thesis: Social Networks: Modeling Small-World Networks
Advisor: Shahriar Shahriari

B.A., Science, Technology, and Society
Thesis: Searching for Community Online: How Virtual Spaces Affect Student Notions of Community
Committee: Marianne de Laet and David Tanenbaum

Mercer Island High School Mercer Island, WA **September 1999 - June 2003**
Diploma

RESEARCH INTERESTS

Social network analysis, online data collection, communication and information technology, computer-mediated communication, mathematical sociology, computational social science, disaster response and recovery, quantitative sociology and methodology.

PROFESSIONAL HONORS

American Sociological Association **August 2011 - August 2012**
Section for Mathematical Sociology
Elected Student Council Member

GRANTS, FELLOWSHIPS, AND AWARDS

Graduate Student Fellow **2012 - 2013**
Center for Networks and Relational Analysis
University of California, Irvine, CA

Best Student Paper Award **December 2012**
Workshop on Social Network and Social Media Analysis: Methods, Models and Applications
26th Annual Conference on Neural Information Processing Systems, Lake Tahoe, Nevada

ACM Web Science 2012 Best Social Science Student Paper Award **June 2012**
Northwestern University, Evanston, IL
Sponsored by Microsoft Research

ACM SIGWEB Web Science 2012 Student Travel Grant **June 2012**
Northwestern University, Evanston, IL

Political Networks NSF Fellowship Stipend <i>University of Colorado, Boulder, CO</i>	June 2012
Political Networks NSF Fellowship Stipend <i>University of Michigan, Ann Arbor, MI</i>	June 2011
Research and Travel Funds Award <i>University of California, Irvine, CA</i>	Summer 2009
Honorable Mention, Graduate Research Fellowship <i>National Science Foundation, Arlington, VA</i>	2009
Social Science Merit Fellowship <i>University of California, Irvine, CA</i>	2008-2012
Social Science Tuition Fellowship <i>University of California, Irvine, CA</i>	2008-2009
Science, Technology and Society Thesis Prize <i>Pomona College, Claremont, CA</i>	May 2007
Pomona College Scholar <i>Pomona College, Claremont, CA</i>	Spring 2005

JOURNAL ARTICLES Spiro, Emma S., Ryan M. Acton, and Carter T. Butts. (Forthcoming) "Extended Structures of Mediation: Re-examining Brokerage in Dynamic Networks." *Social Networks*.

Sutton, Jeannette, Emma S. Spiro, Matt Greczek, Britta Johnson, Sean Fitzhugh, and Carter T. Butts. (Forthcoming) "Tweeting the Spill." *International Journal of Information Systems for Crisis Response and Management*.

Eppstein, David and Emma S. Spiro. (2012) "The h-Index of a Graph and its Application to Dynamic Subgraph Statistics." *Journal of Graph Algorithms and Applications*. Vol. 16, no. 2, pp. 543-567.

PEER-REVIEWED CONFERENCE PROCEEDINGS Spiro, Emma S., Jeannette Sutton, Sean Fitzhugh, Matt Greczek, Nicole Pierski, and Carter T. Butts. (2012) "Rumoring During Extreme Events: A Case Study of Deepwater Horizon 2010." In Proceedings of the ACM Web Science 2012 Conference (WebSci12). Evanston, Illinois. [Best Social Science Student Paper Award]

Sutton, Jeannette, Emma S. Spiro, Matt Greczek, Britta Johnson, Sean Fitzhugh, and Carter T. Butts. (2012) "Connected Communications: Network Structures of Official Communications in Disaster." In Proceedings of the 9th International Conference on Information Systems for Crisis Response and Management (ISCRAM). Vancouver, Canada.

Eppstein, David and Emma S. Spiro. (2009) "The h-Index of a Graph and its Application to Dynamic Subgraph Statistics." Algorithms and Data Structures Symposium (WADS), Banff, Canada. *Lecture Notes in Computer Science* 5664, pp. 278-289.

GENERAL AUDIENCE PUBLICATIONS Spiro, Emma S., Jeannette Sutton, Britta Johnson, Sean Fitzhugh, and Carter T. Butts. (2012). "Superstorm Sandy: Exploring the Twitter Response." Online Research Highlight. <http://heroicproject.org>

Spiro, Emma S., Jeannette Sutton, Britta Johnson, Sean Fitzhugh, and Carter T. Butts. (2012). "HEROIC Team Explores Waldo Canyon Wildfire in Colorado." Online Research Highlight. <http://heroicproject.org>

CONFERENCE PAPERS Spiro, Emma S., Christopher L. DuBois, and Carter T. Butts. (2012) "Waiting for a Retweet: Modeling Waiting Times in Information Propagation." Workshop on Social Network and Social Media

Analysis: Methods, Models and Applications. Neural Information Processing Systems (NIPS).
[Best Student Paper Award]

ARTICLES UNDER REVIEW Sutton, Jeannette, Emma S. Spiro, Britta Johnson, and Carter T. Butts. (2012) "Warning Tweets: Serial Transmission of Warning Messages during a Disaster Event." *Under review*.

Spiro, Emma S., Zack W. Almquist, and Carter T. Butts. (2012) "The Persistence of Division: Geography, Institutions, and Online Friendship Ties." *Under review*.

RESEARCH EXPERIENCE

University of California - Irvine, CA

January 2009 - Present

Department of Sociology, Graduate Student Researcher

- Networks, Computation, and Social Dynamics Lab (NCASD). I have been a research assistant in the lab under the direction of Carter Butts for the past four years. As part of my responsibilities I coordinate communication and research promotion. I also administer a set of data and compute servers. I also design and manage the lab website. For more information see: <http://ncasd.org>
- Project HEROIC, an NSF funded collaborative project between UCI and UCCS, explores rumor-ing in informal online communication networks in response to extreme or hazard events. I have a lead role in designing and building automated data collection systems to monitor event streams of micro-blog posts, as well as performing subsequent data analysis. I also manage communication of research with the public. For more information see: <http://heroicproject.org>
- Scalable Methods for the Analysis of Network-based Data MURI Grant: This MURI project is focused on developing new and innovative methods for analysis of large complex network data sets, focusing in particular on scalable algorithms for statistical analysis for social network data. For more information see: <http://www.datalab.uci.edu/muri/>

INVITED TALKS

Spiro, Emma S., Acton, and Butts. (January, 2011) "Extended Structures of Mediation: Re-examining Brokerage in Dynamic Networks." Conference on Behavior In and On Networks, Institute for Mathematical Behavioral Sciences, University of California, Irvine, California.

CONFERENCE PRESENTATIONS

Gibson, Emma S. Spiro, and Butts. (Upcoming May, 2013) "Estimating Active User Population Dynamics in Online Social Networks." 33rd Sunbelt Network Conference (INSNA), Hamburg, Germany.

Almquist, Emma S. Spiro, and Butts. (Upcoming May, 2013) "Missing Data Methods for Dynamic Network logistic-Regression." 33rd Sunbelt Network Conference (INSNA), Hamburg, Germany.

Spiro, Emma S., and Butts. (Upcoming May, 2013) "Degree dynamics: spikes and decay in attention relationships." 33rd Sunbelt Network Conference (INSNA), Hamburg, Germany.

Spiro, Emma S., Christopher L. DuBois, and Carter T. Butts. (2012) "Waiting for a Retweet: Modeling Waiting Times in Information Propagation." Poster presentation. Workshop on Social Network and Social Media Analysis: Methods, Models and Applications. Neural Information Processing Systems (NIPS). Lake Tahoe, Nevada.

Spiro, Emma S., Pierski, and Butts. (August, 2012) "Mapping an Ecology of Privacy: A Cross-national Comparison of Control of Self-Presentation Online." American Sociological Association: Section on Communication and Information Technology, Denver, Colorado.

Spiro, Emma S., Sutton, Johnson, and Butts. (August, 2012) "Diffusion of Innovation Among Government Organizations: Asymmetric Effects of Organizational Lineage on Social Media Adoption." Fifth Joint Japan-North America Mathematical Sociology Conference. Denver, Colorado.

Spiro, Emma S., Sutton, Fitzhugh, Greczek, Pierski, and Butts. (June, 2012) "Rumoring During Extreme Events: A Case Study of Deepwater Horizon 2010." ACM Web Science 2012 Conference (WebSci12). Evanston, Illinois.

Spiro, Emma S., Sutton, and Butts. (June, 2012) "Shifting Attention: The Effect of External Stimuli on Social Ties Among Emergency Management Organizations." Political Networks Conference,

Boulder, Colorado.

Johnson, Sutton, Emma S. Spiro, Fitzhugh, and Butts. (June, 2012) “Technology Lineage and Adoption: Diffusion of Microblog Technologies Among Government Organization.” Political Networks Conference, Boulder, Colorado.

Spiro, Emma S., Sutton, Fitzhugh, and Butts. (March, 2012) “A Microstructure Topology for Hyperedge Communication Events.” 32nd Sunbelt Network Conference (INSNA), Redondo Beach, California.

Sutton, Emma S. Spiro, Johnson, Greczek, Fitzhugh, and Butts. (March, 2012) “Connected Communications: Network Structures of Official Communications in Disaster.” 32nd Sunbelt Network Conference (INSNA), Redondo Beach, California.

Johnson, Sutton, Emma S. Spiro, Fitzhugh, and Butts. (March, 2012) “Disruptive Diffusion: Adoption of Microblog Technologies Among Urban Organizations.” 32nd Sunbelt Network Conference (INSNA), Redondo Beach, California.

Spiro, Emma S., Almquist, and Butts. (August, 2011) “Maintaining Ties from Coast to Coast: Selective Mixing Among U.S. Universities on Facebook.” American Sociological Association: Section on Methodology Paper Session, Las Vegas, Nevada.

Spiro, Emma S.; Butts, Sutton, Greczek, Fitzhugh, and Pierski. (July, 2011). “Informal Online Communication in the Deepwater Horizon Disaster.” Poster presentation, 2011 Natural Hazards Research and Applications Workshop, Broomfield, Colorado.

Spiro, Emma S., Butts, Sutton, Greczek, Pierski, and Fitzhugh. (June, 2011) “Rumoring During Extreme Events: Deepwater Horizon 2010.” Poster Presentation, Political Networks Conference, Ann Arbor, Michigan.

Spiro, Emma S., Acton, Sutton, Greczek, Pierski, Fitzhugh, and Butts. (February, 2011) “Rumoring in Informal Online Communication Networks.” 31st Sunbelt Network Conference (INSNA), St. Pete Beach, Florida.

Spiro, Emma S., Acton, and Butts. (August, 2010) “Extended Structures of Mediation: Re-examining Brokerage in Dynamic Networks.” American Sociological Association: Section on Mathematical Sociology Paper Session, San Francisco, California.

Acton, Ryan M., Emma S. Spiro, and Butts. (July, 2010) “Change and External Events in Online Networks.” 30th Sunbelt Network Conference (INSNA), Riva del Garda, Italy.

Spiro, Emma S., Acton, and Butts. (July, 2010) “Extended Structures of Mediation: Re-examining Brokerage in Dynamic Networks.” 30th Sunbelt Network Conference (INSNA), Riva del Garda, Italy.

Spiro, Emma S., Acton, and Butts. (August, 2009) “Brokerage Roles in the Immediate Wake of Hurricane Katrina.” ASA Roundtable: Networks and Organizations, San Francisco, California.

Spiro, Emma S., Acton, and Butts. (March, 2009) “Patterns of Coordination: Brokerage Roles in the Immediate Wake of Hurricane Katrina.” 29th Sunbelt Network Conference (INSNA), San Diego, California.

TEACHING
EXPERIENCE

Political Networks: ERG Models for Social Networks
University of Colorado, Boulder, CO
Teaching Assistant

June 13, 2012

INSNA Sunbelt: statnet and sna Workshop
Redondo Beach, CA
Teaching Assistant

March 13, 2011

Political Networks: Sampling and Network Inference June 16, 2011
 University of Michigan, Ann Arbor, MI
Teaching Assistant

Political Networks: Modeling Networks with Missing Data June 16, 2011
 University of Michigan, Ann Arbor, MI
Teaching Assistant

Political Networks: ERG Models for Social Networks June 15, 2011
 University of Michigan, Ann Arbor, MI
Teaching Assistant

INSNA Sunbelt: statnet and sna Workshop February 8, 2011
 St. Pete Beach, FL
Teaching Assistant

Political Networks: statnet and sna Workshop May 19, 2010
 Duke University, Durham, NC
Teaching Assistant

PROFESSIONAL
 NON-ACADEMIC
 EXPERIENCE

Excell Data Corporation: Microsoft Corporation, Redmond, WA
Contractor: Usability Research and Analysis April 2005 - April 2006
 Proposed, designed, and implemented a research project investigating the dual use of computer software for social and academic purposes. Completed data analysis and compiled research report for presentation to Microsoft usability group.

Microsoft Corporation, Redmond, WA June 2004 - August 2004
Usability Engineer Intern, Mentor: Peter Koss-Nobel
 Designed and managed a project working with small businesses to investigate specific needs and usage of Windows Operating System. Directed project analysis and compiled research report, which was presented to a core division of the Microsoft Windows team.

PROFESSIONAL
 SERVICE

Graduate Student Peer Mentoring Program August 2012 - June 2013
Department of Sociology, University of California, Irvine

American Sociological Association August 2011 - August 2012
Section for Mathematical Sociology
Student Council Member
Best Paper Award Committee

University of California - Irvine, CA September 2008 - August 2009
Cohort Representative, Sociology Graduate Student Association

University of California - Irvine, CA September 2010 - August 2011
Cohort Representative, Sociology Graduate Student Association

EDITORIAL REVIEW

- American Journal of Sociology
- The Sociological Quarterly
- 10th International Conference on Information Systems for Crisis Response and Management (ISCRAM 2013): Social Media Track

PROFESSIONAL
 MEMBERSHIPS

- American Sociological Association
- International Network for Social Network Analysis (INSNA)
- International Communication Association

TEACHING
 INTERESTS

- Communication Technology and Society, Information and Communication Technology
- Research Methods, Methods for Online Data Collection

- Social Network Analysis: Introduction to Social Networks, Analysis of Social Network Data, Social Network Theory, Networks and Organizations, Networks and Information Transmission
- Introductory/Advanced Statistical Methods

REFERENCES

Dr. Carter T. Butts, Professor
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Dr. Padhraic Smyth, Professor
University of California, Irvine
Department of Computer Science
Bren School of Information and Computer Science
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