

# Summer Institute 2018 - Reading List

The most critical items are in red and starred.

## ORA

- o \*\*\*\*Kathleen M. Carley, 2014, **ORA: A Toolkit for Dynamic Network Analysis and Visualization**, In Reda Alhajj and Jon Rokne (Eds.) **Encyclopedia of Social Network Analysis and Mining**, Springer.\*\*
- o Kathleen M. Carley and Dave Columbus, 2012, “Basic Lessons in ORA and AutoMap 2012,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report, CMU-ISR-12-107.
- o Miray Kas, Kathleen M. Carley, and L.Richard Carley, 2015, An Incremental Algorithm for Updating Betweenness Centrality and k-Betweenness Centrality and Its Performance on Realistic Dynamic Social Network Data. *Social network analysis and mining (SNAM)*. Springer Vienna. 4(1): 234-256, Jan 9, 2015.
- o George B Davis, Jamie Olson, and Kathleen M. Carley, (2008), “OraGIS and Loom: Spatial and temporal extensions to the ORA Analysis Platform,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report CMU-ISR-08-121.
- o Ian A. McCulloh and Kathleen M. Carley, 2011, “Detecting Change in Longitudinal Social Networks,” *Journal of Social Structure*, 12.3.
- o Ian A. McCulloh, Anthony Norvell Johnson, and Kathleen M. Carley, 2012, “Spectral Analysis of Social Networks to Identify Periodicity,” *The Journal of Mathematical Sociology*, 36.2: 80-96. (Download PDF from Taylor and Francis)

## AutoMap

- o \*\*\*\*Kathleen M. Carley, Dave Columbus and Peter Landwehr, 2013, “**AutoMap User’s Guide 2013**,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report, CMU-ISR-13-105.\*\*
- o Kathleen M. Carley, Michael W. Bigrigg, Boubacar Diallo, 2012, “Data-to-Model: A Mixed Initiative Approach for Rapid Ethnographic Assessment,” *Computational and Mathematical Organization Theory*, 18(3): 300-27. DOI: 10.1007/s10588-012-9125-y
- o Kathleen M. Carley and Dave Columbus, 2012, “Basic Lessons in ORA and AutoMap 2012,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report, CMU-ISR-12-107.

## CEMap

- o Terrill L. Frantz and Kathleen M. Carley, 2008, “CEMAP II: An Architecture and Specifications to Facilitate the Importing of Real-World Data into the CASOS Software

Suite,” Carnegie Mellon University, Institute for Software Research, Technical Report CMU-ISR-08-130.

- Terrill L. Frantz and Kathleen M. Carley, 2009, "Harvesting Ego-Network Data from Facebook: Using the CEMAP Facebook Profile in ORA," Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report CMU-ISR-09-102.
- Terrill L. Frantz and Kathleen M. Carley, 2009, "CEMAP: General Usage Guide," Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report CMU-ISR-09-116. CEMAP General Users Guide 2009.

## Construct

- \*\*\*\*Kathleen M. Carley, and Michael K. Martin and Brian R. Hirshman, 2009, “The Etiology of Social Change,” Institute for Software Research
- \*\*\*\*Kathleen M. Carley, 1990, “Group Stability: A Socio-Cognitive Approach,” *Advances in Group Processes: Theory and Research*. Edited by Lawler E., Markovsky B., Ridgeway C. and Walker H. (Eds.), Vol. VII. Greenwich, CN: JAI Press, 7: 1-44.
- Kathleen M. Carley, 1991, “A Theory of Group Stability,” *American Sociological Review*, 56.3: 331-354. Available from: <http://www.jstor.org/stable/2096108>. Reprinted in *Organizational Networks Research*, 2011, Martin Kilduff Diageo & Andrew V. Shipilov (Eds), Sage.
- Kathleen M. Carley, Michael J. Lanham, Kenneth Joseph, Michael Kowalchuck, and Geoffrey P. Morgan, 2014, “Construct User's Guide”, School of Computer Science, Institute for Software Research, Technical Report CMU-ISR-14-105R.
- Michael J. Lanham, Kenneth Joseph, Geoffrey P. Morgan, and Kathleen M. Carley, 2014, “Construct — Developing and Building CASOS’ Simulation Development Environments”, School of Computer Science, Institute for Software Research, Technical Report CMU-ISR-14-115.
- Brian R. Hirshman, Michael K. Martin and Kathleen M. Carley, 2008, “Modeling Information Access in Construct,” Institute for Software Research, Technical Report, CMU-CS-08-115.
- Brian R. Hirshman, Kathleen M. Carley and Michael J. Kowalchuck, 2007, “Loading Networks in Construct,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report, CMU-ISR-07-116.
- Brian R. Hirshman, Kathleen M. Carley and Michael J. Kowalchuck, 2007, “Specifying Agents in Construct,” Carnegie Mellon University, School of Computer Science, Institute for Software Research, Technical Report, CMU-ISR-07-107.

## Agent-Based Dynamic-Network Simulation

- \*\*\*\*Kathleen M. Carley, (1999), “On Generating Hypotheses Using Computer Simulations,” *Systems Engineering*, 2, 69-77.
- Marcus A. Louie and Kathleen M. Carley, 2008, “Balancing the Criticisms: Validating Multi-Agent Models of Social Systems,” in a special issue on "Simulating Organizational Processes" in *Simulation Modeling Practice and Theory*, 16 (2). Pp. 242-256.

- Michael J. Lanham, Geoffrey P. Morgan, and Kathleen M. Carley. 2014, “Social Network Modeling and Agent-Based Simulation in Support of Crisis De-escalation.” IEEE Transactions on Systems, Man, and Cybernetics: Systems. 44(1): 103-110. DOI: 10.1109/TSMCC.2012.2230255
- Kenneth Joseph, Geoffrey P. Morgan, Michael K. Martin, and Kathleen M. Carley, 2013, On the Coevolution of Stereotype, Culture, and Social Relationships: An Agent-Based Model. Social Science Computer Review. 32(3), 295–311. DOI:10.1177/0894439313511388

## General Network Science

- Kathleen M. Carley, Guido Cervone, Nitin Agarwal, and Huan Liu, 2018, “Social Cyber-Security”, In Proceedings of the International Conference SBP-BRiMS 2018, Halil Bisgin, Ayaz Hyder, Chris Dancy, and Robert Thomson (Eds.) July 10-13, 2018 Washington, DC, Springer.
- Geoffrey Morgan and Kathleen M. Carley, 2017, “Socio-cultural Cognitive Modeling,” In Proceedings of the International Conference SBP-BRiMS 2017, Yu Ru Lin, and Robert Thomson (Eds.) July 5-8, 2017 Washington, DC, Springer.
- David Dekker, David Krackhardt, Tom A. B. Snijders, 2003, “Multicollinearity Robust QAP for Multiple-Regression,” NAACSOS Conference 2003
- David Krackhardt, “The Ties That Torture: Simmelian Tie Analysis in Organizations.”
- George B. Davis and Kathleen M. Carley, 2008, “Clearing the FOG: Fuzzy, overlapping groups for social networks,” Social Networks, 30 (3) 201- 212.
- L.C. Freeman, 2011, "The Development of Social Network Analysis—with an Emphasis on Recent Events," The SAGE Handbook of Social Network Analysis, 26–39.
- Michael D. Ward, K. Stovel, & A. Sacks, 2011, "Network Analysis and Political Science," Annual Review of Political Science, 14(1), 245–264. <http://doi.org/doi:10.1146/annurev.polisci.12.040907.115949>
- Terrill L. Frantz, Marcelo Cataldo and Kathleen M. Carley, 2009, “Robustness of centrality measures under uncertainty: Examining the role of network topology,” Computational and Mathematical Organization Theory, 15.4:303-328.
- Terrill L. Frantz and Kathleen M. Carley, 2010, “Toward A Confidence Estimate For The Most-Central-Actor Finding,” Sage Publications/RM division Best Student Paper Proceedings of the Academy of Management Annual Conference, Chicago, IL, USA.

## Interoperable Systems

- Kathleen M. Carley, Jana Diesner, Jeffrey Reminga and Maksim Tsvetovat, 2007, “Toward an Interoperable Dynamic Network Analysis Toolkit,” DSS Special Issue on Cyberinfrastructure for Homeland Security: Advances in Information Sharing, Data Mining and Collaboration Systems, 43(4): 1324-1347. DOI: 10.1016/j.dss.2006.04.003

## Meta-Networks

- \*\*\*\*Kathleen M. Carley, (2002), “Smart Agents and Organizations of the Future,” 206-220. Thousand Oaks, CA: Sage.

## Illustrative Case Studies

- Matthew Babcock, David Beskow, Kathleen M. Carley, 2018, “Beaten Up on Twitter? Exploring Fake News and Satirical Responses during the Black Panther Movie Event”, In Proceedings of the International Conference SBP-BRiMS 2018, Halil Bisgin, Ayaz Hyder, Chris Dancy, and Robert Thomson (Eds.) July 10-13, 2018 Washington, DC, Springer.
- Matthew Benigni, Kenneth Joseph, and Kathleen M. Carley, 2017, “Online Extremism and the Communities that Sustain It: Detecting the ISIS Supporting Community on Twitter”, PLOS ONE.
- William Frankenstein, Ghita Mezzour, Kathleen M. Carley, L. Richard Carley, 2015, "Remote assessment of countries' nuclear, biological, and cyber capabilities: joint motivation and latent capability approach," *Social Network Analysis and Mining*, 5(1):1-21. DOI: 10.1007/s13278-014-0243-z
- Miray Kas, Alla Khadka, William Frankenstein, Ahmed Y. Abdulla, Frank Kunkel, L. Richard Carley and Kathleen M. Carley, 2012, “Analyzing scientific networks for nuclear capabilities assessment.” *Journal of the American Society for Information Science and Technology*, 63.7: 1294–1312. DOI: 10.1002/asi.22678
- Kathleen M. Carley, Michael K. Martin, John P. Hancock, 2009, *Dynamic Network Analysis Applied to Experiments from the Decision Architectures Research Environment Advanced Decision Architectures for the Warfighter: Foundation and Technology*, ch. 4.
- Judith A. Effken, Sheila Gephart and Kathleen M. Carley, 2013, “Using ORA to Assess the Relationship of Handoffs to Quality and Safety Outcomes,” *CIN: Computers, Informatics, Nursing*. 31(1): 36-44. DOI: 10.1097/NXN.0b013e3182701082
- Craig Schreiber and Kathleen M. Carley, 2013, “Validating Agent Interactions in Construct Against Empirical Communication Networks Using the Calibrated Grounding Technique,” *IEEE Transactions on Systems, Man and Cybernetics-Part A*, 43(1): 208-214. DOI: 10.1109/TSMCA.2012.2192104
- Jacqueline A. Merrill, Kathleen M. Carley, Mark G. Orr, Christie Y. Jeon and Jonathon Storrick, 2012, “Patterns of Interaction Among Local Public Health Officials and the Adoption of Recommended Practices,” *Frontiers in Public Health Services and Systems Research*, 1:1, Article 6. Available from: <http://uknowledge.uky.edu/frontiersinphssr/vol1/iss1/6>