**SIAM Workshop on Network Science (NS16)**

July 15-16, 2016  
The Westin Boston Waterfront, Boston, Massachusetts, USA  
*Co-located with the 2016 SIAM Annual Meeting July 11-15, 2016*

**Friday July 15 (Preliminary Schedule)**

8:30 - 9:00am **Coffee Break** (Webster)

9:00 - 10:00am **Invited Presentation 1** (Stone)  
*Michelle Girvan, University of Maryland*

10:00 - 11:00am **Coffee Break and Poster Session** (Ballroom Pre-Function, Concourse)

11:00 - 12:30pm **Contributed Presentations 1** (Stone)

11:00-11:30 **Kristen M. Altenburger and Johan Ugander**  
Ruffled feathers: When can gender be inferred on social networks?

11:30-12:00 **Juntao Chen, Rui Zhang, and Quanyan Zhu**  
Optimal control of independent epidemics in complex networks

12:00-12:30 **Bailey K. Fosdick, Tyler H. McCormick, and Frank W. Marrs**  
Quantifying uncertainty in network regressions

12:30 - 2:00pm **Lunch** (On your own)

2:00 - 3:30pm **Contributed Presentations 2** (Stone)

2:00-2:30 **Pietro Poggi-Corradini**  
An introduction to the theory of p-modulus on networks

2:30-3:00 **Ignite Talks:**
- **Andrew Beveridge, Mengfei Cao, Amanda Redlich, and Lenore Cowen**  
  Designing exit frequency distance measures for biological networks
- **Patrick Mackey and Jennifer B. Webster**  
  A multi-network analysis of scientists and their scientific co-authorship graphs
• *Dane Taylor, Saray Shai, Natalie Stanley, and Peter J. Mucha*
  Enhanced detection of community structure in multilayer networks through network aggregation

• *Timothy D. Goodrich, Travis S. Humble, and Blair D. Sullivan*
  Optimizing adiabatic program compilation using a graph-theoretic framework

3:00-3:30 *Marya Bazzi, Mason A. Porter, and Sam D. Howison*
Community detection in temporal multilayer networks

3:30 - 4:30pm **Coffee Break and Poster Session** (Ballroom Pre-Function, Concourse)

4:30 - 6:00pm **Contributed Presentations 3** (Stone)

  4:30-5:00 *Reena R. Patel, Guillermo Riveros, Jan Hoover, and Ed Perkins*
  Early detection of failure mechanisms in resilient bio-structures: a complex network study

  5:00-5:30 *Erik Demaine, Felix Reidl, Peter Rossmanith, Fernando Sánchez Villaamil, Somnath Sikdar, and Blair D. Sullivan*
  Structural sparseness and complex networks

  5:30-6:00 *James P. Fairbanks, Anita Zakrzewska, and David A. Bader*
  New stopping criteria for spectral partitioning

6:00 - 7:30pm **Business Meeting** (Stone)
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**Saturday July 16 (Preliminary Schedule)**

8:30 - 9:00am **Coffee Break** (Webster)

9:00 - 10:00am **Invited Presentation 2** (Stone)

*Shang-Hua Teng, University of Southern California*
Through the Lens of the Laplacian Paradigm: Big Data and Scalable Algorithms -- a Pragmatic Match Made On Earth

10:00 - 10:30am **Contributed Presentations 4** (Stone)

10:00-10:30 Daniel B. Larremore, Leto Peel, and Aaron Clauset  
The ground truth about metadata and community detection in networks

10:30 - 11:00am **Coffee Break** (Webster)

11:00 - 12:30pm **Contributed Presentations 5** (Stone)

11:00-11:30 **Ignite Talks**:  
*Alice C. U. Schwarze, Mason A. Porter, and Jonny Wray*  
Redundancy, degeneracy, and robustness in protein-interaction networks

*James P. Bagrow and Lewis Mitchell*  
Measuring the social flow of information and its role in prediction

*Natalie Stanley, Roland Kwitt, Marc Niethammer, and Peter J. Mucha*  
Incorporation of Gaussian attribute data in stochastic block model inference

*Da Zheng, Disa Mhembere, Youngser Park, Joshua Vogelstein, Carey E. Priebe, and Randal Burns*  
Spectral clustering for billion-node graphs

11:30-12:00 **C. Granell, S. Gómez, and A. Arenas**  
Competing spreading processes on multiplex networks: Awareness and epidemics
12:00-12:30 Blair D. Sullivan and Andrew J. van der Poel  
A fast parameterized algorithm for co-path set

12:30 - 2:00pm Lunch (On your own)

2:00 - 3:00pm Contributed Presentations 6 (Stone)

2:00-2:30 Krzysztof Choromanski, Arif Khan, Alex Pothen, and Tony Jebara  
Anonymizing networks with b-edge covers and b-matchings

2:30-3:00 Ignite talks:
  • Alexei Kireyev and Andrei Leonidov  
    Network effects of international shocks and spillovers
  • Tyler Foxworthy  
    Persistent homology of dynamic online referral traffic networks
  • P. Singh, P. Karampourniotis, E. A. Horvat, B. Szymansi, G. Korniss, and B. Uzzi  
    Exact and approximated null models for weighted digraphs
  • Per Sebastian Skardal, Dane Taylor, Jie Sun, and Alex Arenas  
    Collective frequency variation in network synchronization and reverse pagerank

3:00 - 3:30pm Coffee Break (Webster)

3:30 - 4:30pm Contributed Presentations 7 (Stone)

3:30-4:00 Desmond J. Higham, Martin Paton, and Kerem Akartunali  
Centrality analysis for Watts-Strogatz style small world networks

4:00-4:30 David W. Matula and Eli V. Olinick  
A network flow duality foundation for hierarchical cluster analysis

4:30pm Workshop Concludes
**Poster Session, Friday July 15** *(Ballroom Pre-Function, Concourse)*

8:00-10:00am **Poster Set-Up**

10:00-11:00am **Coffee Break and Poster Session**

3:30-4:30pm **Coffee Break and Poster Session**

4:30pm **Posters Removed**

1. **David I. Spivak.** Bifurcation theory of networked dynamical systems

2. **Ira Moskowitz and Hans Haucke.** Geodesic distances in random Delannoy lattices

3. **Wayne Barrett, Amanda Ellis and Benjamin Pachev.** Spectral link prediction

4. **Hsuan-Wei Lee, Nishant Malik and Peter J. Mucha.** Node and link based evolutionary games on coevolving networks

5. **Bogang Jun, Seung-Kyu Yi, Tobias Buchmann and Mattias Mueller.** The co-evolution of innovation networks: The collaboration between East and West Germany from 1972 to 2014

6. **Saleh Soltan and Gil Zussman.** Evaluating the topological robustness of power grids to line failures

7. **Neave O’Clery and Eduardo Lora.** Knowledge networks, industrial diversification and the emergence of complex economic activities

8. **Alexander Panchenko, Vladyslav Oles and Andrei Smertenko.** Boolean network modeling of cambium proliferation

9. **Corentin Vande Kerckhove, Mickael Temporão and Yannick Dufresne.** Unspoken thoughts: Uncovering political ideologies using social networks’ traces
10. Ann Sizemore, Chad Giusti, Matthew Cieslak, Scott Grafton and Danielle Bassett. Exposing mesoscale connectivity patterns in the structural brain network

11. Anthony Bonato. The geometry and dimensionality of social networks


13. Randy Paffenroth and Chong Zhou. Latent feature discovery in noisy network data


15. Daniel Maldonado, Hong Zhang and Shrirang Abhyankar. Software library for scalable multi-physics multi-scale network simulation: Application to water distribution systems

16. Cliff Joslyn, Brenda Praggastis, Emilie Purvine, Arun Sathanur, Michael Robinson and Stephen Ranshous. Local homology dimension as a network science measure

17. Pim van der Hoorn, Liudmila Ostroumova Prokhorenkova and Egor Samosvat. Generating maximally disassortative graphs with given degree distribution


20. Gadi Fibich. Diffusion of new products in social networks with recovering agents


22. Jie Sun and Erik Bollt. Information-theoretic reverse engineering of biological networks

23. Kathleen E. Hamilton and Leonid P. Pryadko. Exponential decay of connectivity and uniqueness in percolation on finite and infinite graphs


28. Erik Boltt and Jie Sun. Identifying the coupling structure in complex systems through the optimal causation entropy principle (oCSE), with applications

29. Daryl Deford. Random dot product models for multigraphs

30. Theodore Papamarkou and Agnes Horvat. Metropolis-Hastings random multiplex generation

31. Guillaume Chapuis and Hristo Djidjev. Parallel computation of betweenness centrality for large planar graphs

32. Saray Shai, Dane Taylor and Peter Mucha. Warping the urban space: The effect of fast subway on street networks

33. Ben Webb. Robust stability for networks with varying time-delays

34. Mahboobeh Hejazibakhsh and Hiroki Sayama. Self-control of networks via adaptive link weight adjustment

35. Serena Yuan and Gordon Peng. Robust combinatorial optimization on multiple networks

36. P. Robert Kotiuga. A spectral geometry based conjecture for families of large sparse Stieltjes matrices

37. Emoke-Agnes Horvat and Kathrin Fläßkamp. A multi-objective optimization approach to measuring centrality

38. Haley Yaple, Catherine Northrup, Elisabeth Rutter and Kerry Stapf. Mean-field models for time-aggregated temporal networks

40. Zizhen Chen and David Matula. Partitioning random geometric graphs into bipartite backbones

41. Heather Patsolic, Vince Lyzinski and Carey Priebe. Vertex nomination via local neighborhood seeded graph matching

42. Albert Sole-Ribalta, Sergio Gómez and Alex Arenas. Congestion induced by the structure of multiplex networks

43. Michael P. O'Brien, Felix Reidl, and Blair D. Sullivan. Counting motifs in structurally sparse graphs

44. Alex J. Chin, Timothy D. Goodrich, Michael P. O'Brien, Felix Reidl, Blair D. Sullivan, and Andrew van der Poel. Analyzing local density in Kronecker models