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

All technical sessions except the Poster Session **will be held in Stone on the Lobby Level**. Due to high attendance, ***Webster will be available as a technical session overflow room*** (adjacent to Stone). Webster will include a screen and audio capability to enable attendees to see and hear the presentation, as well as an audience microphone to allow participants to communicate and ask questions of the presenter. *If there is limited seating in Stone, attendees are encouraged to use Webster on both days of the workshop.*

Friday, July 15

8:30 - 9:00am Coffee Break (Foyer outside Stone/Webster)

9:00 - 10:00am Invited Presentation 1 (Stone/Webster)

Michelle Girvan, University of Maryland
Network approaches for building new insights from gene annotations

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

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

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 interdependent 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/Webster)

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

2:30-3:00 Ignite Talks:
- *Tyler Foxworthy*
    Persistent homology of dynamic online referral traffic 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 layer 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/Webster)

  4:30-5:00 Reena R. Patel, Guillermo Riveros, Jan Hoover, Ed Perkins, and David Thompson
  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)

Saturday, July 16

8:30 - 9:00am Coffee Break (Foyer outside Stone/Webster)

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

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/Webster)

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 (Foyer outside Stone/Webster)

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

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 - 4:20pm Contributed Presentations 6 (Stone/Webster)

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

2:30-2:50 Ignite talks:
- *Andrew Beveridge, Mengfei Cao, Amanda Redlich, and Lenore Cowen*
Designing exit frequency distance measures for biological networks
- *P. Singh, P. Karampourniotis, E. A. Horvat, B. Szymanski, 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

2:50-3:20 Desmond J. Higham, Martin Paton, and Kerem Akartunali
Centrality analysis for Watts-Strogatz style small world networks

3:20-3:50 David W. Matula and Eli V. Olinick
A network flow duality foundation for hierarchical cluster analysis

3:50 - 4:30pm Coffee Break (Foyer outside Stone/Webster)

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

Nathan Albin. Numerical methods for p-modulus on networks

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

Steffen Borgwardt, Jesús A. De Loera, Elisabeth Finhold. The diameters of transportation polytopes satisfy the Hirsch conjecture

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

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

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

Stojan Davidovic, Mirta Galesic, Konstantinos Katsikopoulos, Amit Kothiyal and Nimalan Arinaminpathy. Contagion in banking networks: The role of uncertainty

Daryl R. Deford. Random dot product models for multigraphs

Nethali Fernando. An investigation of node-based metrics on networks arising from p-modulus

Jeremie Fish and Jie Sun. Estimating sustainable perturbations in complex network synchronization

Aric Hagberg, Nathan Lemons and Sidhant Misra. Temporal reachability in dynamic networks

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

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

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

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

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

Austen Kelly, Saray Shai, Emanuele Strano and Peter J. Mucha. An evolving network in an evolving environment: A case study of the Brazilian airline and socioeconomic networks

Andrew Knyazev, Dong Tian, Hassan Mansour, Akshay Gadde, Anthony Vetro and Alexander Malyshev. Methods for graph-based signal processing

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

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

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

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

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

Arun Sathanur and Mahantesh Halappanavar. Exploring the utility of network community structure in the context of influence maximization

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

Heman Shakeri. A generalized clustering coefficient based on p-modulus of loops

Ann Sizemore, Chad Giusti, Matthew Cieslak, Scott Grafton and Danielle Bassett. Exposing mesoscale connectivity patterns in the structural brain network

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

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

Vladimir Ufimtsev, Sanjukta Bhowmick, Soumya Sarkar, and Animesh Mukherjee. Identifying stable networks

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

Corentin Vande Kerckhove, Mickael Temporão and Yannick Dufresne. Uncovering political ideologies using social networks' traces

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

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

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