SIAM Workshop on Network Science (NS18)
July 12-13, 2018
Oregon Convention Center (OCC), Portland, Oregon, USA
Room: Oregon 201

Thursday, July 12, 2018
8:15 AM-5:00 PM

8:15-8:45
Coffee break

8:45-8:50
Welcome

8:50-9:40
Invited Plenary 1 - Raissa D'Souza

9:40-10:30
Contributed Session 1

9:40 AM-10:05 AM
Heterogeneous Micro-structure of Percolation on Networks
Tim Rogers

10:05 AM-10:30 AM
A Re-entrant Phase Transition in the Survival of Secondary Infections on Networks
Sam Moore

10:30-11:00
Coffee Break

11:00-12:15
Contributed Session 2

11:00 AM- 11:25 AM
Equilibrium Community Structure in Binary-state Adaptive Voter Models
Philip Chodrow and Peter Mucha

11:25 AM-11:50 AM
Conjoining Uncooperative Societies to Promote Evolution of Cooperation
Babak Fotouhi, Naghmeh Momeni, Benjamin Allen and Martin A. Nowak

11:50 AM-12:15 AM
Maximum Entropy Sparse Random Graphs with Given Average Degree and Clustering
Pim van der Hoorn, Dmitri Krioukov, Gabor Lippner and Johan Van Leeuwaarden

12:15-12:30
Short Talk Session 1

12:15 PM-12:20 PM
Self-organization of Dragon Kings
Yuansheng Lin, Keith Burghardt, Martin Rohden, Pierre-Andre Noel and Raissa D'Souza.

12:20 PM-12:25 PM
Random Spatial Networks and Analytic Models for the Spread of SIR Epidemics
Joel Miller

12:30-2:00
Lunch on your own

2:00-2:45 Danielle S. Bassett, University of Pennsylvania, USA (AN18 IP18)
2:45-3:30 Tammy Kolda, SIMODS (AN18, MS113)

3:30-4:00
Coffee Break

4:00-4:50
Contributed Session 3

4:00 PM-4:25 PM
Network Constraints on Learnability of Probabilistic Motor Sequences
Ari E. Kahn, Elisabeth A. Karuza, Jean M. Vettel and Danielle S. Bassett

4:25 PM-4:50 PM
A Spectrum of Routing Strategies for Brain Networks
Andrea Avena-Koenigsberger, Xiaoran Yan, Artemy Kolchinsky, Martijn van den Heuvel, Patric Hagmann and Olaf Sporns.

4:50-5:15
Short Talk Session 2

4:50 PM-4:55 PM
Structural and Functional Redundancy of Biological Networks
Alice Schwarze, Mason A. Porter and Jonny Wray

4:55 PM-5:00PM
A New Dimension-reduction Method for Complex Dynamical Networks
Edward Laurence, Nicolas Doyon, Louis J Dubé and Patrick Desrosiers

5:00 PM-5:05 PM
Estimating Epidemic Arrival Times using Linear Spreading Theory
Lawrence Chen, Matt Holzer and Anne Shapiro

5:05 PM-5:10 PM
A Bridge Between Homotopy Theory and Network Science
Leo Torres, Pablo Suárez Serrato and Tina Eliassi-Rad

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Friday, July 13, 2018
8:30-4:30

8:30-9:00
Coffee break

9:00 AM- 9:50 AM
Invited Plenary 2
David Bindel

9:50 - 10:15
Short Talk Session 3

9:50 AM-9:55 AM
Graph Reduction by Edge Deletion and Edge Contraction
Gecia Bravo Hermsdorff and Lee Gunderson

9:55 AM-10:00 AM
A Unifying Framework for Graph Clustering
Nate Veldt, David Gleich and Anthony Wirth

10:00 AM-10:05 AM
Conditional Tests for Log-linear ERGMs
Elizabeth Gross, Sonja Petrovic and Despina Stasi

10:05 AM-10:10 AM
Toward a Sampling Theory for Statistical Network Analysis
Harry Crane and Jianxiang Gao

10:15-11:40
Poster Session and coffee break

11:40-12:30
Contributed Session 4

11:40 AM-12:05 PM
Inference in Regression with Network Response
Frank Marrs, Bailey Fosdick and Tyler H. McCormick

12:05 PM-12:30 PM
Influence Estimation on Social Media Networks using Causal Inference
Edward Kao, Steven Smith, Danelle Shah, Olga Simek and Donald Rubin

12:30-2:00
Lunch on your own

2:00-2:20
Short Talk Session 4

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2:00 PM-2:05 PM
On Spectral Embedding Performance and Elucidating Network Structure in Stochastic Block Model Graphs
Joshua Cape, Minh Tang and Carey E. Priebe

2:05 PM-2:10 PM
Pairwise versus Multivariate Constructions of Co-occurrence Networks
Cory Brunson and Reinhard Laubenbacher

2:10 PM-2:15 PM
Large Degree Asymptotics and Reconstruction Thresholds of Asymmetric Ising Channels
Wenjian Liu and Ning Ning

2:20-3:35
Contributed Session 5

2:20 PM-2:45 PM
Simplicial Closure and Higher-order Link Prediction
Austin Benson, Rediet Abebe, Michael Schaub, Ali Jadbabaie and Jon Kleinberg

2:45 PM-3:10 PM
Undetectable Cyber-Physical Attacks on Power Grids under the AC Model
Daniel Bienstock and Mauro Escobar

3:10 PM-3:30 PM
Rumor Source Detection with Multiple Observations under Adaptive Diffusion Protocols
Miklos Z. Racz and Jacob Richey

3:35-3:50
Closing Remarks

4:00-4:30
Coffee break

Poster Session

A Principal Stratification Approach to Uncomplicate Causal Inference Complications on Social Networks
Kristen M. Altenburger

Temporal Weighted Graphs; Routing, Reachability, and their Application to Mobile Crowd Sensing
Christine Bassem

Street Network Models and Planarity in Urban Form Studies
Geoff Boeing

Quantifying Prior over Graphical Representations of Tasks
Gecia Bravo-Hermsdorff

A Unitary Optimisation Process for the Formation of Heterogeneous Structures in Bipartite mutualistic networks
Weiran Cai, Jordan Snyder, Raissa D'souza and Alan Hastings

Backbone Structure of Hierarchical Network Partitioning
Zizhen Chen and David Matula

Personalized PageRank under the Degree-corrected Stochastic Blockmodel
Fan Chen and Karl Rohe

Simulation of the Network Topology of Grain Growth in Metals
Amanda Criner

Every Planar Map can be Converted to a Planar Graph (and Vice Versa)
Jorge Diaz-Castro

The Influence of Time Series Distance Functions on Climate Networks
Leonardo Ferreira, Liang Zhao and Elbert Macau

Neural Interactome: Interactive Simulation of a Neuronal System
Jimin Kim, William Leahy and Eli Shlizerman

Approximating Trace(L^{\dagger}) using the Johnson-Lindenstrauss Lemma and Spectral Methods
Jesse Laeuchli

Stochastic Branching Process in Wireless Network Communication
Hyunsun Lee, Yi Zhu and Brian Spain

Hypothesis Testing for Dynamic Graphs
Nathan Lemons

Biased Edge-weighting Schemes Can Boost Reproducibility of Centrality Measures in Brain Networks
Tingshan Liu and Gwen Spencer

Normalized Mutual Information Exaggerates Community Detection Performance
Arya D McCarthy and David W Matula

EoN: An Open-source Python Package for Epidemics on Networks
Joel Miller

Computing the Statistical Significance of Optimized Communities in Networks
John Palowitch

Exploiting Intra-type Information in Bipartite Community Detection
Paola Pesantez-Cabrera, Ananth Kalyanaraman and Mahantesh Halappanavar

Parameter-induced Uncertainty in Network Inference
Arvind Prasadan, Rajmonda Caceres and Vijay Gadepally

Synthetic Temporal Graph Generation
Sumit Purohit, Lawrence B Holder and George Chin

Data Fusion Reconstruction of Spatially Embedded Complex Networks
Fernando Quevedo

Expanding Seed Sets with Degree Corrected Random Walks in the Degree Corrected Stochastic Block Model
Stephen Ragain

Greenberg-Hastings Dynamics on a Small-world Network: The Effect of Network Disorder on the Collective Extinct-active Transition
Leonardo Reyes, Anthony Ramos, Fernando Zhapa and Miguel Pineda

The Network Topology of Locally Interacting Agents and System-level Distributions of Agent Actions
Janelle Schlossberger

Growing Signed Networks
Leah Shaw, Corynne Dech and Shadrack Antwi

Evidence of Stereotypical Functional Network Motifs Across Temporal Scales in Very High-dimensional Brain Signals
Catherine Stamoulis

How do Graphs Effect Global Stability of Sync in a Simplified Kuramoto Model?
Yury Sokolov and G. Bard Ermentrout

A Toy Model of Preferentially-Attached Networks with Break-ups
Hiroshi Toyoizumi and Takahiro Shimomura