

Northeast Regional Conference on Complex Systems (NERCCS 2020)

Date: April 2-3, 2020
Location: **online only**
Webpage: <https://nerccs2020.github.io/>

Contributed Talks

(1A) Socioeconomic systems – Thursday April 2, 11:00am–12:20pm (chair: Leila Hedayatifar)

- 1A-1. **Ashwath Ashok, Carlin Reyen, Afzal Shah, Carol Reynolds and Hiroki Sayama.** Correlation Between Socioeconomic Risk Factors and HTT Gene Mutations Leading to Neurodegenerative Autosomal-Dominant Diseases
- 1A-2. **Siyu Huang, Qinghua Chen and Xiaomeng Li.** A Study on the Evolution of Global Migration Pattern based on Complex Network
- 1A-3. **Zeinab S. Jalali, Krishnaram Kenthapadi and Sucheta Soundarajan.** Towards Diversifying Organizational Networks through Employee Assignments
- 1A-4. **Jaron Cui, John Guo, Daksh Mehta, Ameet Ashok, Carol Reynolds and Hiroki Sayama.** The Viability of Wealth-Based Post-Secondary Educational Affirmative Action

(1B) Collective Behavior – Thursday April 2, 11:00am–12:20pm (chair: Erdem Sariyuce)

- 1B-1. **Dobromir Dotov.** Dynamic Interactive Minimal Artificial Intelligence with Examples from Human Sensorimotor Control
- 1B-2. **Tomasz Raducha, Mateusz Wilinski, Tomasz Gubiec and Gene Stanley.** Statistical mechanics of a coevolving spin system
- 1B-3. **Zhao Song and Dane Taylor.** Diffusion on Multiplex Networks with Asymmetric Coupling
- 1B-4. **Lana Delasanta, Dobri Dotov, Laurel Trainor and Edward Large.** Analyzing Group Drumming Using a Dynamical Systems Approach

(2A) Network theory I – Thursday April 2, 3:10pm–4:30pm (chair: Jean-Gabriel Young)

- 2A-1. **Valerio Guarrasi, Penghang Liu and A. Erdem Sariyuce.** Temporal Network Motifs: Models, Limitations, Unification
- 2A-2. **Shun Cao and Hiroki Sayama.** Entropy-based Detecting of Dynamic States in Temporal Networks
- 2A-3. **Elohim Fonseca dos Reis, Aming Li and Naoki Masuda.** Interacting human dynamics as a mixture of Poisson processes
- 2A-4. **Timothy Larock, Vahan Nanumyan, Ingo Scholtes, Giona Casiraghi, Tina Eliassi-Rad and Frank Schweitzer.** Analyzing DeBruijn Graphs to Discover Over- and Under-represented Pathways

(2B) Dynamical systems – Thursday April 2, 3:10pm–4:30pm (chair: Gino Biondini)

- 2B-1. **Sean Cornelius and Chia-Hung Yang.** Emergence of Laplace-distributed Growth Rates in Complex Systems
- 2B-2. **Shweta Singh and Mieczyslaw M. Kokar.** Reduced Complexity Approach for Emergent Behavior Detection
- 2B-3. **Joseph Johnson, Nathan White, Alain Kangabire and Daniel Abrams.** A Mathematical Model of Anisogamy
- 2B-4. **Erik Bollt.** Geometric Considerations of a Good Dictionary for Koopman Analysis of Dynamical Systems

(3A) Spatial patterns & PDEs – Friday April 3, 11:00am–12:20pm (chair: Bernard Ricca)

- 3A-1. **Jonathan Lottes and Gino Biondini.** Dispersive Shocks in the Lugiato-Lefever Equation
- 3A-2. **Daniel Cooney.** PDE Models of Multilevel Selection: Cooperation and the Shadow of Lower-level Selection
- 3A-3. **Dmitri Kireyev and Gino Biondini.** (2+1) Dimensional Equations of Nonlinear Schrodinger Type and their Dispersive Shock Waves
- 3A-4. **Hiroki Sayama.** Enhanced Information Gathering May Intensify Disagreement Among Groups

(3B) Network theory II – Friday April 3, 11:00am–12:20pm (chair: Sean Cornelius)

- 3B-1. **Jean-Gabriel Young, George T. Cantwell and M. E. J. Newman.** Efficient and Fully Bayesian Inference of Complex Networks from Noisy Data
- 3B-2. **Ryan Gallagher, Jean-Gabriel Young and Brooke Foucault Welles.** Diversity of Core-Periphery Structure in Real Networks
- 3B-3. **Philip Chodrow.** Moments of Uniformly Random Multigraphs with Fixed Degree Sequences
- 3B-4. **István Kovács.** Utilizing Complex Networks with Error Bars

(4A) Agent-based modeling – Friday April 3, 3:10pm–4:30pm (chair: Hiroki Sayama)

- 4A-1. **Alina Vereshchaka and Wen Dong.** Resource Allocation During Natural Disasters Using Multi-agent Systems
- 4A-2. **Matthew Barlin and Michael Zargham.** Emergent Price Dynamics through Simulation of Modeled Multi-market Investor Agents
- 4A-3. **Surendra Hazarie, Hugo Barbosa, Adam Frank, Ronaldo Menezes and Gourab Ghoshal.** Uncovering the Role of Spatial Constraints in Physical and Virtual Mobility
- 4A-4. **Simone Cassani, Joseph Benson, Mariya Bessonov, Korana Burke, Maria-Veronica Ciocanel, Daniel Cooney and Alexandria Volkening.** Mathematical Models of Pedestrian Movement in Large Lecture Halls

(4B) Neuro-systems – Friday April 3, 3:10pm–4:30pm (chair: Istvan Kovacs)

- 4B-1. **Kanika Bansal, Emily Grossman and Javier Garcia.** Functional reconfigurations of brain networks upon focal stimulation
- 4B-2. **Cong Ye, Konstantinos Slavakis, Sarah Muldoon, Johan Nakuci and John Medaglia.** Fast Sequential Multilayer Brain-Network State Clustering
- 4B-3. **Marinho Lopes, Jiaxiang Zhang, Dominik Krzemiński, Khalid Hamandi, Qi Chen, Lorenzo Livi and Naoki Masuda.** Recurrence Analysis of Dynamic Functional Brain Networks
- 4B-4. **Johan Nakuci, Thomas J. Covey, Janet L. Shucard, David W. Shucard and Sarah F. Muldoon.** A single-trial Clustering Approach to Examining Neural Variability During Working Memory