

Schedule

Wednesday, December 4

8:30 – 8:55	Registration (Chambers Hall)
8:55 – 9:00	Opening Remarks
9:00 – 9:45	Rosemary Braun (Northwestern University, USA) <i>Tutorial – Form and Function in the Architecture of Intracellular Networks</i>
9:45 – 10:00	Bradly Alicea (Michigan State University, USA) <i>From Switches to Convolution to Tangled Webs: Evolving Sub-Optimal, Subtle Biological Mechanisms</i>
10:00 – 10:15	Daniel Larremore (Harvard School of Public Health, USA) <i>Revealing Constraints on Genetic Recombination among Malaria Parasites by Mapping Genetic Sequences to Complex Networks</i>
10:15 – 10:30	Tin Yau Pang (Stony Brook University, USA) <i>Universal Distribution of Component Frequencies in Biological and Technological Systems</i>
10:30 – 11:00	Coffee Break
11:00 – 11:45	Elad Harel (Northwestern University, USA) <i>Tutorial – Supercontinuum Multi-Dimensional Spectroscopy for the Study of Energy Flow through Molecular Networks</i>
11:45 – 12:00	Jen Schwarz (Syracuse University, USA) <i>Jamming Graphs: A Local Approach to Global Mechanical Rigidity</i>
12:00 – 12:15	Yasmin Khorramzadeh (Virginia Tech, USA) <i>Analyzing Edge Criticality Using a Reliability-Based Measure</i>
12:15 – 12:30	Dane Taylor (University of North Carolina, USA) <i>Dynamics in Hybrid Complex Systems of Switches and Oscillators</i>
12:30 – 12:45	Mark Panaggio (Northwestern University, USA) <i>Coupled Oscillators on a Sphere</i>
12:45 – 2:15	Lunch Break (Allen Center)
1:10 – 1:50	Danielle S. Bassett (University of Pennsylvania, USA) <i>Probing Human Brain Network Dynamics During Learning</i>
2:15 – 3:00	Sean Cornelius (Northwestern University, USA) <i>Tutorial – Nonlinear Network Dynamics and Cascade Control</i>
3:00 – 3:15	Tom Hurd (McMaster University, Canada) <i>Illiquidity and Insolvency Cascades in the Interbank Network</i>
3:15 – 3:30	Thomas Wytock (Northwestern University, USA) <i>Model-Independent Design of Cell Reprogramming Transitions</i>
3:30 – 3:45	Takaaki Aoki (Kagawa University, Japan) <i>Self-Organized Network Structure Emerging from Co-Evolving Dynamics between Resources on Nodes and Weighted Connections</i>
3:45 – 4:15	Coffee Break

4:15 – 5:00	Bruce J. West (Army Research Office, USA) <i>Tutorial – Fractional Calculus View of Complexity: A Tutorial</i>
5:00 – 5:15	Jorge G. T. Zañudo (The Pennsylvania State University, USA) <i>An Effective Network Reduction Approach to Find the Dynamical Repertoire of Discrete Dynamic Models</i>
5:15 – 5:30	Demetris Antoniadis (Georgia Institute of Technology, USA) <i>Co-Evolutionary Dynamics in Social Networks: A Case Study of Twitter</i>
5:30 – 5:45	Michael Szell (Massachusetts Institute of Technology, USA) <i>Taxi Pooling in New York City: A Network-Based Approach to Social Sharing Problems</i>
5:45 – 6:00	Roberta Sinatra (Northeastern University, USA) <i>Scientific Success: The Story of your Big Hit</i>
6:30 – 8:30	Poster Session and Reception (Technological Institute, Jerome B. Cohen Commons)
6:45 – 7:15	Daniel Abrams (Northwestern University, USA) <i>Lefties, Languages and (Religious) Leavers: Network Structure and Social Group Competition Dynamics</i>

Thursday, December 5

8:30 – 8:55	Registration (Chambers Hall)
8:55 – 9:00	Opening Remarks
9:00 – 9:40	Luís A. N. Amaral (Northwestern University, USA) <i>Network Approaches to Topic Modeling</i>
9:40 – 10:15	Hawoong Jeong (Korea Advanced Institute of Science and Technology, Korea) <i>Google Knows (Almost) Everything! – Big-Data and Network Science</i>
10:15 – 10:30	Maksim Kitsak (Northeastern University, USA) <i>Popularity Versus Similarity in Growing Networks</i>
10:30 – 11:00	Coffee Break
11:00 – 11:35	Anna Nagurney (University of Massachusetts, Amherst, USA) <i>Envisioning a Future Internet Architecture: The Network Economics of ChoiceNet</i>
11:35 – 12:10	Marta C. González (Massachusetts Institute of Technology, USA) <i>Tackling Urban Challenges with Information and Communications Technologies</i>
12:10 – 12:25	Sang Hoon Lee (University of Oxford, England) <i>Density and Transport-Based Core-Periphery Structures in Networks</i>
12:25 – 12:40	Yong-Yeol Ahn (Indiana University, Bloomington, USA) <i>Network Communities and Viral Memes</i>
12:40 – 2:15	Lunch Break (Allen Center)
2:15 – 2:55	Zoltán Toroczkai (University of Notre Dame, USA) <i>A Distance Rule Based Predictive Model of the Cortical Brain Network</i>
2:55 – 3:10	Juan G Restrepo (University of Colorado at Boulder, USA) <i>Self-Sustained Critical Dynamics in Networks of Excitatory and Inhibitory Excitable Systems</i>
3:10 – 3:25	Epaminondas Rosa (Illinois State University, USA) <i>Mathematical Model for the Stomatogastric Nervous Systems of the Crab <i>Cancer borealis</i></i>
3:25 – 3:40	Shane A Squires (University of Maryland, USA) <i>Stability of Boolean Networks: The Joint Effect of Topology and Update Rules</i>
3:40 – 4:10	Coffee Break

4:10 – 4:45 Peter J. Mucha (University of North Carolina, Chapel Hill, USA)
Time-Dependent Generalizations of Hub and Authority Scores

4:45 – 5:20 Alex Arenas (Rovira i Virgili University, Spain)
Multiplex Networks, Structure and Dynamics

5:20 – 5:35 Kwang-Il Goh (Korea University, Korea)
Co-Evolution Models of Multiplex Networks

5:35 – 5:50 Mario Giacobini (University of Torino, Italy)
The Importance of Being Multipartite ... or at Least Bipartite

6:00 – 8:00 Wine and Cheese

6:30 – 7:15 Christopher M. Danforth (University of Vermont, USA)
Remote Sensing of Emotional States in Real-Time – <http://hedonometer.org>

Friday, December 6

8:30 – 9:10 Jürgen Kurths (Potsdam Institute for Climate Impact Research, Germany)
How Basin Stability Complements the Linear-Stability Paradigm

9:10 – 9:45 Naoki Masuda (The University of Tokyo, Japan)
Laplacian Dynamics Slows Down on Temporal Networks

9:45 – 10:00 Randy A. Freeman (Northwestern University, USA)
Decentralized Synchronization of Heterogeneous Oscillators on Networks with Arbitrary Topology

10:00 – 10:15 Aaron M. Hagerstrom (University of Maryland, USA)
Symmetries, Cluster Synchronization, and Isolated Desynchronization in Complex Networks

10:15 – 10:45 Coffee Break

10:45 – 11:20 Vittoria Colizza (INSERM & Université Pierre et Marie Curie, France and ISI Foundation, Italy)
Heterogeneities and the Spatial Spread of Infectious Diseases

11:20 – 11:55 Michelle Girvan (University of Maryland, College Park, USA)
Finding New Order in Biological Functions from the Network Structure of Gene Annotations

11:55 – 12:10 Kai Morino (The University of Tokyo, Japan)
Failure Recovery in Complex Networks Composed of Active and Inactive Oscillators

12:10 – 12:25 Jie Sun (Clarkson University, USA)
Controllability Transition and Nonlocality in Network Control

12:25 – 12:40 Yang Yang (Northwestern University, USA)
Network Observability Transitions

12:40 – 2:15 Lunch Break (Allen Center)

2:15 – 2:55 Albert-László Barabási (Northeastern University and Harvard Medical School, USA)
Network Science: From Structure to Control

2:55 – 3:10 Daniel Wells (Northwestern University, USA)
Control of Stochastic Switching in Biological Networks

3:10 – 3:25 Colin Campbell (The Pennsylvania State University, USA)
Stabilization of Perturbed Boolean Network Attractors through Compensatory Interactions

3:25 – 3:40 Takashi Nishikawa (Northwestern University, USA)
Realistic Modeling of Synchronization in Power-Grid Networks

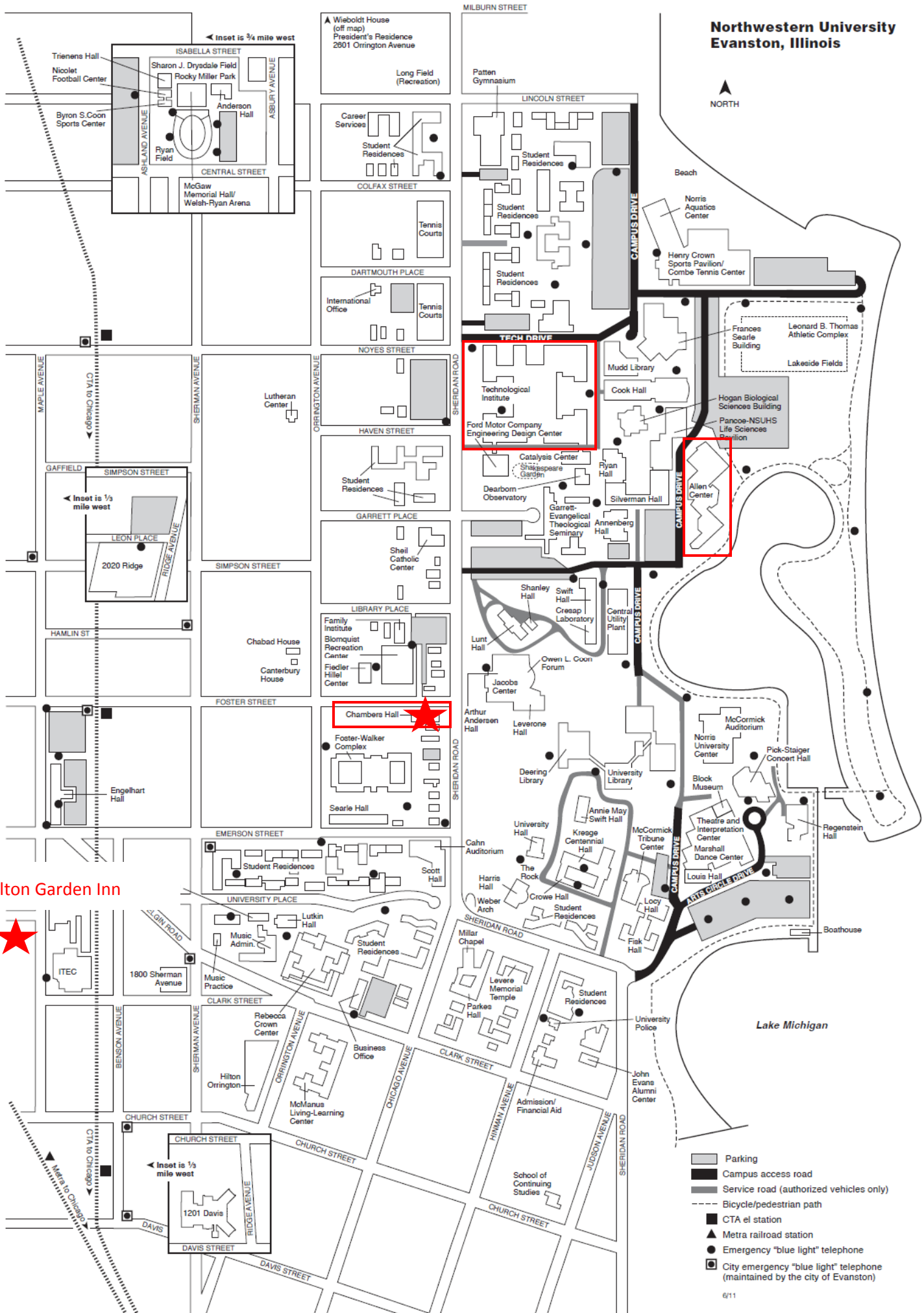
3:40 – 6:00 Joint Event with Physics & Astronomy Colloquium (Technological Institute, L-211)

3:40 – 4:00 Refreshments

4:00 – 5:00 Christopher L. DeMarco (University of Wisconsin, Madison, USA)
Describing Power Grid Cascading Outage Dynamics as Phase Transitions in Nearly Hamiltonian Models

5:00 – 6:00 Closing and Reception

Northwestern University Evanston, Illinois



Hilton Garden Inn



- Parking
- Campus access road
- Service road (authorized vehicles only)
- Bicycle/pedestrian path
- CTA el station
- Metra railroad station
- Emergency "blue light" telephone
- City emergency "blue light" telephone (maintained by the city of Evanston)