

## Graph Exploitation Symposium

- Preface
- Acknowledgments
- Agenda

MIT Lincoln Laboratory

# GRAPH EXPLOITATION SYMPOSIUM



510827

GES-7

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18–19 May 2016

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## PREFACE

### Graph Exploitation Symposium

The GraphEx Symposium brought together leading experts from universities, industry, and government to explore the state of the art and define a future roadmap in network science. The event was limited to a small group of invited attendees. The symposium took place at the MIT Endicott House.

### Symposium Highlights

The two-day technical program topics of interest included:

- Modeling noise and uncertainty
- Multi-modal and heterogeneous networks
- Algorithms and processing architectures for large-scale data
- Models and techniques for dynamic graphs
- Anomaly, subgraph, and community detection
- Network visualization and visual analytics
- Challenge problems for the next decade

*Group Photograph of the GraphEx Symposium attendees*

*Report Documentation and Contract Acknowledgment Pages*

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# ACKNOWLEDGMENTS

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William Streilein

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MIT Lincoln Laboratory

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  - 18 May 2016
  - 19 May 2016
  - Poster Session

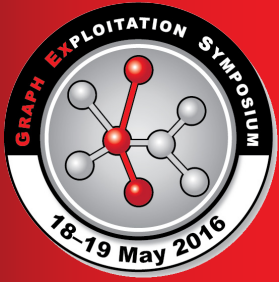
## AGENDA

**18 May 2016**

- |    |  |               |                                       |
|----|--|---------------|---------------------------------------|
| 01 | Day 1 Keynote<br><i>Foundational Principles of Large Scale Graph Mining*</i>               | A.O. Hero III | University of Michigan                |
| 02 | <i>Higher-Order Organization of Complex Networks*</i>                                      | D. Gleich     | Purdue University                     |
| 03 | <i>Inside the Atoms: Mining a Network of Networks and Beyond</i>                           | H. Tong       | Arizona State University              |
| 04 | <i>Edge-Exchangeable Graphs, Sparsity, and Power Laws</i>                                  | T. Broderick  | Massachusetts Institute of Technology |
| 05 | <i>A Bayesian Idealization of Entity Resolution on Networks</i>                            | J. Ferry      | Metron                                |
| 06 | <i>Cooperative Computing for Autonomous Data Centers</i>                                   | J. Saia       | University of New Mexico              |
| 07 | <i>Secure Multi-Party Computation of Probabilistic Threat Propagation</i>                  | E. Shen       | MIT Lincoln Laboratory                |
| 08 | Banquet Speaker<br><i>Peer Effects, Social Multipliers and Cascades of Human Behavior*</i> | S. Aral       | MIT Sloan School of Management        |

\*Presentation not included in proceedings.

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**19 May 2016**

- |    |   |              |                                   |
|----|---|--------------|-----------------------------------|
| 01 | Day 2 Keynote<br><i>Easy Graph Algorithms under Hard Constraints</i>                      | P. Burkhardt | Research Directorate,<br>NSA      |
| 02 | <i>Dynamic Graph Visualization and Exploration*</i>                                       | C. Goerg     | University of Colorado,<br>Denver |
| 03 | <i>Interactive Visualization of Complex Networks*</i>                                     | N.H. Riche   | Microsoft                         |
| 04 | <i>Data Mining Meets HCI: Interactive Visual Tools<br/>for Large Graphs</i>               | P. Chau      | Georgia Tech                      |
| 05 | <i>Hypergraph Exploitation for Data Sciences</i>  | M. Wolf      | Sandia National<br>Laboratories   |
| 06 | <i>Searching for Meaning in the Era of Big Data<br/>and IoT</i>                           | T. Tran      | DARPA                             |
| 07 | <i>BigDAWG: A Polystore System to Support<br/>Complex Analytics on Heterogeneous Data</i> | T. Mattson   | Intel                             |
| 08 | <i>An Advanced Graph Processor Prototype</i>  | V. Gleyzer   | MIT Lincoln Laboratory            |

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### Poster Session

01	<i>Entity Embedding-Based Anomaly Detection for Heterogeneous Categorical Events*</i>	T. Chen	Northeastern University
02	<i>Task-Based Timescale Detection in Dynamic Networks</i>	B. Fish	Univ. of Illinois at Chicago/ MIT Lincoln Laboratory
03	<i>Network-Based Content Discovery and Classification</i>	T. Greer	MIT Lincoln Laboratory
04	<i>Ideology Detection for Twitter Users via Heterogeneous Types of Links</i>	Y. Gu	Northeastern University
05	<i>Cross-Domain Entity Resolution in Social Media</i>	L. Li	MIT Lincoln Laboratory
06	<i>Sampling and Link Prediction on Large Graphs</i>	L. Milechin	MIT Lincoln Laboratory
07	<i>Fast Algorithms for Finding Dense Subgraphs with Hierarchy</i>	E. Sariyuce	Sandia National Laboratories
08	<i>Increasing the Size of Partially Observed Networks*</i>	S. Soundarajan	Syracuse University
09	<i>Unbiased Estimation of Casual Effects under Network Interference</i>	D. Sussman	Harvard University
10	<i>Enhanced Detectability of Community Structure in Multilayer Networks through Layer Aggregation</i>	D. Taylor	University of North Carolina
11	<i>Causal Inference with Partially Revealed Network Interference</i>	P. Toulis	Harvard University
12	<i>Observational Studies on Networks: Entangled Treatments and Calculating Propensity Scores</i>	A. Volfovsky	Harvard University

\*Poster not included in proceedings.