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- ACKNOWLEDGMENTS
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# GRAPH EXPLOITATION SYMPOSIUM

## 17-18 MAY 2021

MIT LINCOLN LABORATORY

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# PREFACE

## GRAPH EXPLOITATION SYMPOSIUM

The Graph Exploitation Symposium 2021 brought together leading experts from universities, industry, and government to explore the state of the art and define a future roadmap in network science. That year's symposium focused on social influences on graphs, COVID pandemics, and machine learning on graphs. In order to provide an interactive environment and promote strong interaction among the attendees, the event was limited to a small group of invited attendees. In light of COVID-19, the symposium took place virtually on Monday, May 17- Tuesday, May 18.

## SYMPOSIUM HIGHLIGHTS

The two-day technical program topics of interest included:

- Social influences
- Analysis of anomalous, covert and hidden communities
- Inference under noise and uncertainty
- Drug discovery and design
- Pandemic modeling, prediction and control
- Recent advancement in machine learning on graphs
- Novel applications of machine learning on graphs
- Challenges from various applications including bio, cyber, material and social domains



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# ACKNOWLEDGMENTS

## ORGANIZERS

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## DAY 1 | 17 MAY 2021

**Keynote: Brian Kettler, DARPA**

Cognitive Security Challenges: A Multi-Faceted Approach

**Johan Ugander, Stanford University**

Larger, faster, deeper, broader diffusion cascades – or simply larger?

**Liz McQuillan, Graphika**

Cultural Convergence: Insights into the behavior of misinformation networks on Twitter

**Erika Mackin, MIT Lincoln Laboratory**

Reconnaissance of Influence Operations (RIO)

**Keynote: Chris Bail, Duke University**

Anonymous Cross-Party Conversations Can Decrease Political Polarization:  
A Field Experiment on a New Social Media Platform

**Edo Airoidi, Temple & Harvard University**

Leveraging Behavioral Models for Designing Causal Analyses Resilient to  
Model Failure

**Brian Karrer, Facebook**

Network Experimentation

**Abdullah Almaatouq, MIT**

An empirically grounded theory of tasks using high-throughput experiment design



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## DAY 2 | 18 MAY 2021

**Keynote: Alex Vespignani**, *Northeastern University*

Computational Epidemiology at the time of COVID-19

**Lucas Laird**, *MIT Lincoln Laboratory*

A network-informed approach for designing effective pandemic control strategies

**Marinka Zitnik**, *Harvard University*

Graph Representation Learning for Drug Discovery

**Rafael Gómez-Bombarelli**, *MIT*

Adversarial attacks on uncertainty for active learning graph-convolutional interatomic potentials

**Keynote: Jure Leskovec**, *Stanford University*

Graph Neural Networks and Beyond

**Bruno Ribeiro**, *Purdue University*

On Graph Embeddings and Extrapolations

**Tiago Peixoto**, *Central European University*

Revealing consensus and dissensus between network partitions

**Matt Yancey**, *IDA*

Negatively Curved Graphs