# CORY GLOVER, M.S.
## NETWORK SCIENTIST • MATHEMATICIAN • DATA SCIENTIST

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## RESEARCH OVERVIEW

My research applies **network science** to uncover the organizing principles behind the complex systems that shape our world. From transportation and social media to ecology and Broadway productions, networks are everywhere—and I use tools from **mathematics**, **statistical physics**, and **computer science** to model them, analyze their structure, and reveal hidden patterns. I strive to work on **interdisciplinary projects** where I can combine my theoretical expertise with domain experts to solve large-scale computationally and algorithmically challenging problems.

## EDUCATION

**PhD Candidate in Network Science**                    **2021-2026**
*Northeastern University*
*Advisor: Dr. Albert-László Barabási*
*Committee Members: Drs. Brennan Klein, Márton Pósfai, Gabor Lippner*

**Master's in Network Science**                    **2025**
*Northeastern University*
*Advisor: Dr. Albert-László Barabási*

**Master's in Mathematics**                    **2021**
*Brigham Young University Advisor:*
*Dr. Mark Kempton*

**Bachelor's in Mathematics**                    **2019**
*Brigham Young University*
*Applied and Computational Emphasis*

## Publications

*Editors' Suggestion †Journal Best of Year Collection

**\*†Glover, C.**, & Barabási, A. L. (2024). Measuring Entanglement in Physical Networks. Physical Review Letters, 133(7), 007401.

Breen, J., Faught, N., **Glover, C.**, Kempton, M., Knudson, A., & Oveson, A. (2023). Kemeny's constant for non-backtracking random walks. Random Structures and Algorithms.

**Glover, C.**, & Kempton, M. (2021). Some spectral properties of the non-backtracking matrix of a graph. Linear Algebra and its Applications, 618, 37-57.

Colton, L., **Glover, C.**, Hughes, M. & Sandberg, S. (2019). A Reidemeister type theorem for petal diagrams of knots. Topology and its Applications, 267, 106896.

## In Progress

**Glover, C.**, Van der Kolk, J., & Barabási, Albert-László. (In progress). Network Design.

**Glover, C.**, Weis, E., Ehlert, J., Kumar, S., & Klein, B. (In progress). Structural Bias in Network Reconstruction.

**Glover, C.**, & Barabási, Albert-László. (In Progress). Physical Properties of Network Entanglement.

Frandsen, S., **Glover, C.**, Cash, R., Blumberger, D., Choi, K.S., … & Siddiqui, S. (In progress). A dual-circuit causal model of depression in humans.

## Presentations

*Invited Talk

Joint Mathematics Meetings, Network Design, Washington D.C., January 2025.

Joint Mathematics Meetings, Measuring Entanglement in Physical Networks, Washington D.C., January 2025.

APS Annual Meeting, Measuring Entanglement in Physical Networks, Anaheim, CA, March 2025.

*Joint Mathematics Meetings, Non-Backtracking Spectrum of Graphs, Seattle, WA, January 2025. SIAM

MDS, Deconstructing Reconstruction: Structural Biases in Networks Reconstructed from Time
Series Data, Atlanta, GA, October 2024.

SIAM MDS, Measuring Entanglement in Physical Networks, Atlanta, GA, October 2024.

NetSci, Measuring Entanglement in Physical Networks, Quebec City, Canada, June 2024.

Zámeček DYNASNET Workshop, Effects of Network Topology on Entanglement, Lednice, Czech Republic, 2023.

NetSci, Effects of Network Topology on the Entanglement of Physical Networks, Vienna, Austria, 2023. Joint

Mathematics Meetings, Fabrication of Physical Networks: Counting Graphs in Three-Dimensional
Space, Boston, MA, 2023.

Joint Mathematics Meetings, Effects of Backtracking on PageRank, Boston, MA 2023.

Zámeček DYNASNET Workshop, The Fabrics of Physical Networks, Lednice, Czech Republic, 2022.

Graduate Student Combinatorics Conference, Non-Backtracking Spectrum of Graphs, Minneapolis, MN,
2021.

Brigham Young University Spring Research Conference, Non-Backtracking Spectrum of Graphs, Provo, UT,
2021.

AMS Fall Western Sectional Meeting, Understanding the Non-Backtracking Spectrum of Graphs, Salt Lake
City, UT 2020.

Brigham Young University Spring Research Conference, Spectral Properties of Non-Backtracking Random
Walks, Provo, UT, 2019.

Brigham Young University Spring Research Conference, A Reidemeister Type Theorem on Petal Projections
of Knots, Provo, UT 2019.

Joint Mathematics Meetings, A Reidemeister Type Theorem on Petal Projections of Knots, Baltimore, MD,
2019.

## Teaching Experience

Teaching Assistant, Computational Linear Algebra, 2021.

Teaching Assistant, Modeling with Uncertainty and Data, 2019-2021. Instructor,

Finite Mathematics, 2020.

Teaching Assistant, Algorithm Design and Optimization Lab, 2018-2019. Class

Developer, Modeling with Uncertainty and Data Lab, 2018-2019. Class

Developer, Algorithm Design and Optimization Lab, 2018-2019.

Class Developer, Mathematical Analysis Lab, 2018-2019. Linear

Algebra Tutor, 2017-2018

Multivariate Calculus Tutor, 2017-2018 Real

Analysis Tutor, 2017-2018.

## Course Materials

Humphreys, J. & Jarvis, T. (2018). Lab Manuals for Foundations of Applied Mathematics. https://foundations-of-applied-mathematics.github.io. Brigham Young University. (Contributor).

## Academic Achievements

Outstanding Achievement in Mathematics, Brigham Young University, 2018-2019.

Best Presentation of Session, Brigham Young University Spring Research Conference, 2019.

Outstanding Achievement in Mathematics, Brigham Young University, 2017-2018.

## Professional Honors

COMAP MCM/ICM Judge, 2025.

COMAP MCM/ICM Judge, 2023.

Acceptance to National Security Agency Graduate Mathematics Program, 2020. Canceled due to COVID- 19.

Acceptance to MSRI Summer Graduate School on Random Graphs, 2020. Canceled due to COVID-19

## Review Experience

Served as reviewer for Discrete Mathematics

## Technical Skills

**Network Science:** Graph-Tool, Neo4j, NetworkX, Community Detection, Spectral Graph Theory, Network Modeling, Network Inference, Physical Networks

**Data Science/ML:** Python, Sklearn, SHAP, R, PyTorch, Git

**API:** OpenAlex, Wikidata

**HPC:** Slurm, Parallel Processing

**Other:** Blender, Cura, 3D Printing, Spanish