

Carolina Mattsson

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EDUCATION	Northeastern University Ph.D. Network Science	Expected May, 2020
	Lehigh University B.S. Physics B.A. International Relations Eckardt Scholar Program	May, 2014
RESEARCH POSITIONS	NSF Graduate Research Fellow Network Science Institute, Northeastern University Develop network science for financial transaction data as applied to real-world payment systems. Advance projects in the Lazer Lab on methods in computational social science integrating digital trace, administrative, and survey data.	2014-2020 Boston, MA
	National Undergraduate Fellow General Atomics Participated in an intensive short course on plasma physics; studied the material properties of boron-carbide, an ultra-hard ceramic.	2013 San Diego, CA
JOURNAL ARTICLES	Monetary flows at native resolution Carolina Mattsson	<i>Submitted</i>
	Context-specific hybrid data collection for multifaceted social ties Carolina Mattsson, Drew Margolin, Stefan Wojcik, David Lazer	<i>Submitted</i>
REPORTS & THESES	Follow the money: making sense of payment systems Carolina Mattsson. Advisor: David Lazer. <i>Network Science Institute, Northeastern University.</i>	2020
	Understanding Key Mobile Money Users Carolina Mattsson, Guy Stuart. <i>International Finance Corporation.</i>	2018
	Combating fake news: An agenda for research and action David Lazer, Matthew Baum, Nir Grinberg, Lisa Friedland, Kenneth Joseph, Will Hobbs, Carolina Mattsson. <i>Harvard Kennedy School, Shorenstein Center on Media, Politics and Public Policy.</i>	2017
	Abrupt Changes in Nuclear Power Development Carolina Mattsson. Advisor: Arman Grigoryan. <i>Department of International Relations, Lehigh University.</i>	2014
PATENTS	Method and Apparatus for Tracking Data in an Entry-Exit Network U.S. Provisional Patent Application No.: 62/809,359	2019
GRANTS & FELLOWSHIPS	INTERN Supplemental Funding Opportunity <i>with Sara Wadia-Fascetti, PhD Network Vice Provost, Northeastern University</i> National Science Foundation	2019

Understanding Advanced Users of Mobile Money
with Guy Stuart, Executive Director, Microfinance Opportunities
 Bill & Melinda Gates Foundation 2016

Graduate Research Fellowship Program
with Sara Wadia-Fascetti, PhD Network Vice Provost, Northeastern University
 National Science Foundation 2015

NULab for Text, Maps, and Networks Fellowship
with Julia Flanders, Professor of the Practice, Northeastern University
 NULab for Text, Maps, and Networks, Northeastern University 2014

National Undergraduate Fellowship Program
with Greg C. Randall, Research Scientist, General Atomics
 U.S. Department of Energy 2013

HONORS & AWARDS	• Oles M. Smolansky Award for Academic Excellence in IR	2014
	• Donald T. Campbell Social Science Research Prize	2014
	• Lemmon Prize	2014
	• Rhodes Scholarship and Marshall Scholarship Finalist	2014
	• Malcolm J. Gordon, Jr. Physics Prize	2011
	• Lehigh Academic Merit Award	2010

PRESENTATIONS

Monitoring Mobile Money Use
poster with Shafique Jamal, Soren Heitmann, Guy Stuart
 NetMob Conference, Mathematical Institute, University of Oxford 07/2019

Follow the money: making sense of payment systems
 International Conference on Network Science, Burlington, VT 05/2019

Follow the money: making sense of digital payment systems
 Center for International Development, Harvard Kennedy School 03/2019

Follow the money: making sense of payment systems
 North America Convening of INET YSI, Los Angeles 02/2019

Quantifying economic activity on financial transaction networks
poster at International Conference on Complex Systems, Cambridge, MA 07/2018

Follow the money: making sense of financial transaction networks
 Workshop on Statistical Physics for Financial and Economic Networks, NetSci
 Paris 06/2018

Follow the money: Defining node sequences on weighted and directed temporal networks
 International Conference on Complex Networks 2018, Boston 03/2018

Disambiguating the Federal Election Commission Campaign Contribution Database
with Navid Dianati, Derek Ruths, David Lazer

	Politics & Computational Social Science, Northeastern University	08/2018
	What does mobile metadata measure? Insights from a pilot study during a sudden emergency with Drew Margolin, Stefan Wojcik, David Lazer NetMob Conference 2017, Vodafone Village, Milan, Italy	04/2017
	Interpersonal network dynamics in an emerging crisis with Drew Margolin, David Lazer XXXVI Sunbelt Conference 2016, Newport Beach, CA	04/2016
	On social ties and stability: an agent-based model of informal economies <i>poster</i> with Eloy Fisher, Sharon Greenblum, Jakub Rojcek Workshop on Information in Networks Conference, New York, NY	10/2015
	Boron Carbide Materials for Inertial Confinement Fusion <i>poster</i> with G.C. Randall, H. Xu, H. Streckert, C. Hill, A. Nikroo (General Atomics) APS Division of Plasma Physics Conference, Denver, CO	11/2013
WORKSHOPS	Social Science Foo Camp Facebook Headquarters, Menlo Park, CA	2019
	Summer School in Economic Networks Mathematical Institute, University of Oxford	2018
	Complex Systems Summer School Santa Fe Institute, Santa Fe, NM	2015
TEACHING	DS2001: Programming with Data Social Science Practicum Khoury College of Computer Sciences Northeastern University	2019
MENTORING	COMAP Interdisciplinary Contest in Modeling Final Grader & Expert Commentary, ICM Problem F (policy)	2019
	MIT Research Sciences Institute Summer Program Project mentor	2018
SERVICE	International Conference on Network Science Program Committee Member, NetSci-X Tokyo School, Satellite, and Poster Committee Member, NetSci Burlington	2020 2019
	Workshop on Economic and Financial Networks Organizer, NetSci-X Tokyo Organizer, NetSci Burlington	2020 2019
	International Conference on Computational Social Science Program Committee Member, IC2S2 Amsterdam	2019
	INET Young Scholar Initiative Organizer, Complexity Economics Working Group	2019

International Conference on Complex Networks
Invited Speaker Liaison, CompleNet Boston 2018

Society for Young Network Scientists
Founding Member 2018

Network Science Institute Graduate Student Association
Founding President 2016

PROFESSIONAL AFFILIATIONS • Network Science Society • American Economic Association
• Society for Young Network Scientists • INET Young Scholar Initiative

GRADUATE COURSES

- Complex Networks
- Dynamic Processes on Networks
- Data Mining Techniques
- Bayesian & Network Statistics
- Algorithms
- Social Networks
- Social Capital & Resilience
- International Economic Development
- Economics of Money and Banking (Coursera)

TECHNICAL SKILLS **Programming & Statistics:** Python, R, Gephi, QGIS, SPSS, Stata, Fortran
Research Computing: Unix, Git, SLURM, AWS Command Line Interface
Languages: Native fluency in English & Swedish. Fluent in Spanish.

CONSULTING EXPERIENCE **Business for Social Responsibility Project**
with Microfinance Opportunities, Cambridge, MA. 2019
Analyst. The objective of this work was to quantify and understand the impact of wage digitization (HerProject) on the lives of garment workers in Bangladesh, and their use of financial services. Responsible for technical analysis of financial transaction data, quantifying the behavior of individual mobile money users from empirical cash flow patterns. The resulting behavioral measures are integrated with rich survey data to better understand the use of financial services among the poor.

Digital Money Network Analysis
with Microfinance Opportunities, Cambridge, MA.
International Finance Corporation 2017
Researcher. The objective of this project was to quantify the maturity of mobile money services from providers' own transaction records. Responsible for technical analysis of financial transaction data, developing and implementing measures, and drafting reports. The measures developed under the course of this project are suitable for comparison across providers and countries, which will contribute to identifying and sharing best practices for mobile money providers. This project also uncovered systematic fraud (commission manipulation) by a subset of mobile money agents.

Understanding Key Mobile Money Users
with Microfinance Opportunities, Cambridge, MA.
Bill & Melinda Gates Foundation 2016
Researcher. The objective of this project was to identify and profile key users of mobile money services in Uganda, Kenya, and Tanzania. Responsible for data cleaning, data analysis, interpretation of results, and drafting reports. Integrated three waves of Financial Inclusion Insights surveys of mobile money use; conducted big data analysis of mobile money transactions.

Mobile Money Study

with Cignifi Inc., Cambridge, MA.

International Finance Corporation

2015

Analyst. The objective of this work was to identify and target potential mobile money users using Call Detail Records. Responsible for providing subject-area expertise and conducting network analysis on mobile money transaction data.