

<b>EDUCATION</b>	<b>Northeastern University</b> Ph.D. Network Science	March 23, 2020
	<b>Lehigh University</b> B.S. Physics B.A. International Relations Eckardt Scholar Program	May, 2014
<b>RESEARCH POSITIONS</b>	<b>Postdoctoral Researcher in Network Science</b> Leiden Institute of Advanced Computer Science Advance projects in the mapping and modeling of real-world production networks, financial transaction networks, and transportation networks. Co-supervise MSc and PhD students in the Computational Network Science Lab on various topics.	2020-2021 Leiden, Netherlands
	<b>NSF Graduate Research Fellow</b> Network Science Institute, Northeastern University Developed network science for financial transaction data as applied to real-world payment systems. Furthered projects in the Lazer Lab on methods in computational social science integrating digital trace, administrative, and survey data.	2014-2020 Boston, MA
	<b>National Undergraduate Fellow</b> 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
	<b>Networks of monetary flow at native resolution</b> Carolina Mattsson	<i>Submitted</i>
<b>JOURNAL ARTICLES</b>	<b>Context-specific hybrid data collection for social ties in action</b> Carolina Mattsson, Drew Margolin, Stefan Wojcik, David Lazer	<i>Submitted</i>
<b>REPORTS &amp; THESES</b>	<b>Financial Transaction Networks</b> Carolina Mattsson. Advisor: David Lazer. <i>Network Science Institute, Northeastern University.</i>	2020
	<b>Understanding Key Mobile Money Users</b> Carolina Mattsson, Guy Stuart. <i>International Finance Corporation.</i>	2018
	<b>Combating fake news: An agenda for research and action</b> 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
	<b>Abrupt Changes in Nuclear Power Development</b> Carolina Mattsson. Advisor: Arman Grigoryan. <i>Department of International</i>	

	<i>Relations, Lehigh University.</i>	2014
<b>PATENTS</b>	<b>Method and Apparatus for Tracking Data in an Entry-Exit Network</b> U.S. Provisional Patent Application No.: 62/809,359	2019
<b>GRANTS &amp; FELLOWSHIPS</b>	<b>INTERN Supplemental Funding Opportunity</b> <i>with Sara Wadia-Fascetti, PhD Network Vice Provost, Northeastern University</i> National Science Foundation	2019
	<b>Understanding Advanced Users of Mobile Money</b> <i>with Guy Stuart, Executive Director, Microfinance Opportunities</i> Bill & Melinda Gates Foundation	2016
	<b>Graduate Research Fellowship Program</b> <i>with Sara Wadia-Fascetti, PhD Network Vice Provost, Northeastern University</i> National Science Foundation	2015
	<b>NULab for Text, Maps, and Networks Fellowship</b> <i>with Julia Flanders, Professor of the Practice, Northeastern University</i> NULab for Text, Maps, and Networks, Northeastern University	2014
	<b>National Undergraduate Fellowship Program</b> <i>with Greg C. Randall, Research Scientist, General Atomics</i> U.S. Department of Energy	2013
<b>TEACHING</b>	<b>DS2001: Programming with Data Social Science Practicum</b> Khoury College of Computer Sciences Northeastern University	2019
<b>HONORS &amp; AWARDS</b>	<ul style="list-style-type: none"> <li>• Oles M. Smolansky Award for Academic Excellence in IR</li> <li>• Donald T. Campbell Social Science Research Prize</li> <li>• Lemmon Prize</li> <li>• Rhodes Scholarship and Marshall Scholarship Finalist</li> <li>• Malcolm J. Gordon, Jr. Physics Prize</li> <li>• Lehigh University Academic Merit Award</li> <li>• National Merit Scholar</li> </ul>	2014 2014 2014 2014 2011 2010 2009
<b>INVITED TALKS</b>	<b>Follow the money: making sense of financial transaction networks</b> B.E.S.T. Workshop on Complex Systems in Finance and Economics, Kyoto University	01/2020
	<b>Follow the money: making sense of digital payment systems</b> Center for International Development, Harvard Kennedy School	03/2019
<b>PRESENTATIONS</b>	<b>Monitoring Mobile Money Use</b> <i>poster with Shafique Jamal, Soren Heitmann, Guy Stuart</i> NetMob Conference, Mathematical Institute, University of Oxford	07/2019
	<b>Follow the money: making sense of payment systems</b> International Conference on Network Science, Burlington, VT	05/2019

	<b>Follow the money: making sense of payment systems</b> North America Convening of INET YSI, Los Angeles	02/2019
	<b>Quantifying economic activity on financial transaction networks</b> <i>poster</i> at International Conference on Complex Systems, Cambridge, MA	07/2018
	<b>Follow the money: making sense of financial transaction networks</b> Workshop on Statistical Physics for Financial and Economic Networks, NetSci Paris	06/2018
	<b>Follow the money: Defining node sequences on weighted and directed temporal networks</b> International Conference on Complex Networks 2018, Boston	03/2018
	<b>Disambiguating the Federal Election Commission Campaign Contribution Database</b> with Navid Dianati, Derek Ruths, David Lazer Politics & Computational Social Science, Northeastern University	08/2018
	<b>What does mobile metadata measure? Insights from a pilot study during a sudden emergency</b> with Drew Margolin, Stefan Wojcik, David Lazer NetMob Conference 2017, Vodafone Village, Milan, Italy	04/2017
	<b>Interpersonal network dynamics in an emerging crisis</b> with Drew Margolin, David Lazer XXXVI Sunbelt Conference 2016, Newport Beach, CA	04/2016
	<b>On social ties and stability: an agent-based model of informal economies</b> <i>poster</i> with Eloy Fisher, Sharon Greenblum, Jakub Rojcek Workshop on Information in Networks Conference, New York, NY	10/2015
	<b>Boron Carbide Materials for Inertial Confinement Fusion</b> <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
<b>WORKSHOPS</b>	<b>Social Science Foo Camp</b> Facebook Headquarters, Menlo Park, CA	2019
	<b>Summer School in Economic Networks</b> Mathematical Institute, University of Oxford	2018
	<b>Complex Systems Summer School</b> Santa Fe Institute, Santa Fe, NM	2015
<b>MENTORING</b>	<b>COMAP Interdisciplinary Contest in Modeling</b> Final Grader, ICM Problem F (policy)	2019
	<b>MIT Research Sciences Institute Summer Program</b> Project mentor	2018

<b>COMMENTS</b>	<b>Why is inequality bad?</b> <i>Social Science Space Blog</i>	11/2019
	<b>Theory and tools in the age of big data</b> <i>NULab for Text, Maps, and Networks Blog</i>	03/2019
	<b>Expert Commentary: The Digital Currency Problem</b> <i>Undergraduate Mathematics and Its Applications Vol 40.2-3</i>	2019
<b>LEADERSHIP &amp; SERVICE</b>	<b>International Conference on Network Science</b> Program Committee Member, NetSci-X Tokyo	2020
	School, Satellite, and Poster Committee Member, NetSci Burlington	2019
	<b>Workshop on Economic and Financial Networks</b> Organizer, NetSci-X Tokyo	2020
	Organizer, NetSci Burlington	2019
	<b>International Conference on Computational Social Science</b> Program Committee Member, IC2S2 Amsterdam	2019
	<b>INET Young Scholar Initiative</b> Organizer, Complexity Economics Working Group	2019
	<b>International Conference on Complex Networks</b> Invited Speaker Liaison, CompleNet Boston	2018
	<b>Society for Young Network Scientists</b> Founding Member	2018
	<b>Network Science Institute Graduate Student Association</b> Founding President	2016-17
	<b>Northeastern College of Science Graduate Student Council</b> Representative, Network Science Program	2015-17
<b>PROFESSIONAL AFFILIATIONS</b>	<b>Lehigh University Council of Student Presidents</b> Representative, Global Union	2015-17
	<b>Lehigh University Global Union</b> President	2014
<b>GRADUATE COURSES</b>	<ul style="list-style-type: none"> <li>• Network Science Society</li> <li>• Society for Young Network Scientists</li> </ul>	<ul style="list-style-type: none"> <li>• American Economic Association</li> <li>• INET Young Scholar Initiative</li> </ul>
	<ul style="list-style-type: none"> <li>• Complex Networks</li> <li>• Dynamic Processes on Networks</li> <li>• Data Mining Techniques</li> <li>• Bayesian &amp; Network Statistics</li> <li>• Algorithms</li> </ul>	<ul style="list-style-type: none"> <li>• Social Networks</li> <li>• Social Capital &amp; Resilience</li> <li>• International Economic Development</li> <li>• Economics of Money and Banking (Coursera)</li> </ul>

## 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.