

BENJAMIN FREIXAS EMERY

PhD Student at the University of Colorado Boulder

Contact

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Education

The University of Colorado Boulder

PhD in Information Science - College of Communication, Media, and Information
Network science and NLP for studying misinformation, moral panic, and extremism.
Currently enrolled.

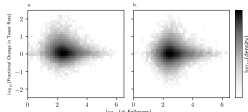
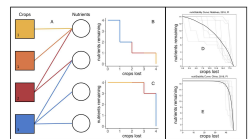
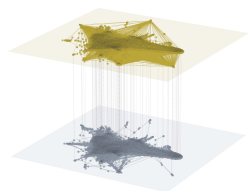
The University of Vermont

M.S. in Complex Systems and Data Science - College of Engineering and Mathematical Sciences
M.S. Thesis - *Network scientific and information theoretic approaches to social media in extreme climate events*
Graduated in May 2019.

The University of Vermont

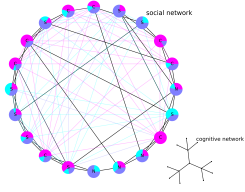
B.S. in Statistics - College of Engineering and Mathematical Sciences
B.S. in Physics - College of Arts and Sciences
Minor in Mathematics - College of Engineering and Mathematical Sciences
Graduated in May 2016.

Research papers



Publications

- [6] L. R. Orozco, A. E. Weaver, C. C. Pauli, C. J. Grassa, D. V. A. Baptista, K. White, **B. F. Emery**, N. R. M. Castro, R. F. Guerrero, B. C. Keegan, and N. C. Kane, “Unraveling Cross-Cellular Communication in Cannabis sativa Sex Determination: A Network Ontology Transcript Annotation (Nota) Analysis,” *In Review at Scientific Reports*, 2025.
- [5] A. Naugle, D. Krofcheck, C. Warrender, K. Lakkaraju, L. Swiler, S. Verzi, **B. F. Emery**, J. Murdock, M. Bernard, and V. Romero, “What can simulation test beds teach us about social science? Results of the ground truth program,” *Computational and Mathematical Organization Theory*, pp. 1–22, 2022.
- [4] C. C. Nicholson, **B. F. Emery**, and M. T. Niles, “Global relationships between crop diversity and nutritional stability,” *Nature Communications*, vol. 12, no. 1, pp. 1–9, 2021.
- [3] **B. F. Emery**, M. T. Niles, C. M. Danforth, and P. S. Dodds, “Local information sources received the most attention from Puerto Ricans during the aftermath of Hurricane Maria,” *PLOS ONE*, vol. 16, no. 6, p. e0251704, 2021.
- [2] M. T. Niles, **B. F. Emery**, S. Wiltshire, M. E. Brown, B. Fisher, and T. H. Ricketts, “Climate impacts associated with reduced diet diversity in children across nineteen countries,” *Environmental Research Letters*, vol. 16, no. 1, p. 015010, 2021.
- [1] M. T. Niles, **B. F. Emery**, A. J. Reagan, P. S. Dodds, and C. M. Danforth, “Social media usage patterns during natural hazards,” *PLOS ONE*, vol. 14, no. 2, p. e0210484, 2019.



White papers

- A Model of Narrative Reinforcement on a Dual-Layer Social Network
- A Projected Network Model of Online Disinformation Cascades
- Sensitivity and Uncertainty Analysis of Generator Failures under Extreme Temperature Scenarios in Power Systems

Presentations

- “Modeling Moral Panic in the Mainstream Media”, talk, Graduate Workshop on Computational Social Science, Santa Fe Institute, New Mexico USA, July 2024.
- “Norm-Changing and Code-Switching: Modeling norms as adaptable edge attributes”, Group talk with Gülşah Akçakır (UCLA), Graduate Workshop on Computational Social Science, Santa Fe Institute, New Mexico USA, July 2024.
- “Cohorted Community Genealogy for Characterizing the Online Extremism Ecosystem”, poster, NetSci 2024, Quebec City, Quebec CA, June 2024.
- “Characterizing Temporal Communication Networks During the r/Place Experiment”, Group talk with Sam Rosenblatt (UVM) and Moritz Laber (Northeastern University), Complex Networks Winter Workshop, Quebec City, Quebec CA, December 2023.
- “A projected model of online disinformation cascades”, talk, Networks 2021, Online, July 2021.
- “Working-group On Monetization of Bipartisan Advertising on Television”, Group talk with Bridgit Keown (University of Pittsburgh), Laura Vander Meiden (University of Nebraska-Lincoln), and Mahsa Nouri Zonouz (Data for Governance Lab), Complex Networks Winter Workshop, Online, January 2021.
- “An Ensemble of Terrible Networks: Null Models for Noisy Problems”, Group talk with Sam Rosenblatt (UVM) and Sarah Shugars (Northeastern University), Complex Networks Winter Workshop, Quebec City, Quebec CA, December 2018.
- “Using the frequency of Teletherm flickering to map the propensity for climatic regime transitions”, poster, SAMSI Climate Opening Workshop, Research Triangle Park, North Carolina USA, August 2017.

Software

Proficient in	Experienced in
Python	Javascript / D3
BASH	MATLAB
LaTeX	
R	
PostgreSQL	

Teams, organizations, and service

Food and Information Research Symposia, University of Colorado Boulder Information Science
 Director (2023-present)
 Organizing informal seminars for students to congregate, discuss research, and build community.

Colorado Laboratory for Users, Media, and Networks, University of Colorado Boulder Information Science
Researcher (2023-present)
Original research with Professor Brian Keegan.

PLOS One, Public Library of Science
Manuscript reviewer (2 papers: 2020, 2025)

npj Complexity, Nature Publishing Group
Manuscript reviewer (1 paper: 2024)

Albuquerque Mountain Bike Association
Trail Development Committee Member (2021-2023)

Applied Complexity Network, Santa Fe Institute
Member (2020-2023)

Computational StoryLab, University of Vermont Complex Systems Center
Researcher (2016-2019)
Original research conducted in collaboration with Professors Chris Danforth and Peter Dodds.

Niles Lab Team, University of Vermont Department of Food Systems
Researcher (2018-2019)
Original research under the guidance of Professor Meredith Niles.

Student Complexity Research and Pizza Seminars, University of Vermont Complex Systems Center
Director (2017-2019)
Organizing informal seminars for students to gather and discuss research ideas and results.

UVM Cycling Team, University of Vermont Club Sports
Member (2012-2019)
2015-2016 Mountain Bike Season Coordinator
National Championships Racer (2015, 2018)
Eastern Conference Mountain Bike Season Omnium Champion (2018)

UVM Society of Physics Students, University of Vermont Department of Physics
4-year member (2012-2016)
Secretary (2015-2016)

UVM Bikes, University of Vermont
Campus Bike Shop Volunteer Mechanic (2016)

Work experience

Grader - *University of Colorado Boulder, Department of Computer Science*
September 2024 - present

Grading for Biological Networks (undergraduate) and Network Analysis & Modeling (graduate), both taught by Aaron Clauset.

Teaching Assistant - *University of Colorado Boulder, Department of Information Science*
January 2024 - present

Leading recitation, holding office hours, and conducting grading for 40 students per semester in Introduction to Programming for Information Science.

Research Assistant - *University of Vermont, Department of Food Systems*
May 2024 - August 2024

Aided Meredith Niles and Lauren Hunt with statistical analysis of adoption of climate-smart practices for dairy farming and covercrop agriculture.

Doctoral Research Assistant - *University of Colorado Boulder, Department of Information Science*
August 2023 - December 2023

Constructed a database to house historical Reddit data from the defunct Pushshift API. Uncovered genealogies of online communities to investigate online migration between platforms.

Senior Member of the Technical Staff - *Sandia National Laboratories, Applied Information Sciences Center*
May 2022 - July 2023

Member of the Technical Staff - *Sandia National Laboratories, Applied Information Sciences Center*
October 2019 - May 2022

Contributing to basic research in areas including power grid resilience and social systems modeling, and to the development of new unsupervised learning techniques. Principally investigating questions surrounding the spread and influence of online misinformation.

Research Scientist - *University of Vermont Department of Food Systems*
June 2018 - October 2019

Generated visuals and analyzed data for a research projects led by Professor Meredith Niles, supported by a grant from the National Institute of Food and Agriculture.

Graduate Teaching Assistant - *University of Vermont Department of Mathematics and Statistics*
January 2017 - December 2018

Taught introductory college mathematics courses ranging from algebra to calculus, and held drop-in help sessions for students enrolled in mathematics courses.

Data Science Contractor - *EQUITAS Life Sciences Consulting*
January 2018 - August 2018

Used machine learning methods to help clients in the medical industry classify the products of competitors and easily identify their own analogous products.

Data Analyst / Business Consultant Intern - *Cox Automotive / Dealer.com*
May 2017 - August 2017

Analyzed data collected by the Customer Support team at Dealer.com. Made meaningful conclusions about the effectiveness of their practices, offered strategic plans to improve customer satisfaction and company growth. Created tools in Python for the company to use in assessing the trajectories employee performance.

Astronomy Education Intern - *Saint Paul's School Advanced Studies Program*
June 2016 - August 2016

Assisted in teaching an introductory astronomy class for excelling high school seniors. The curriculum included fundamentals of astronomy, emerging topics, and the basics of astronomical research, such as navigating the sky with telescopes and analyzing astronomical data with Python. Also supervised the students' residential life and recreation.

Intern / Technology Analyst - *UVM Office of Technology Commercialization*
January 2016 - April 2016 and September 2012 - May 2013

Provided preliminary analysis of patent applications and conducted prior art research. Compiled sell sheets for confirmed patents held by UVM professors.

Awards, honors, and funding

Information Science Community Leadership and Service Award, University of Colorado, 2025

Buffalization Data Visualization Challenge, Graduate Student Category Winner, University of Colorado, 2025

CMCI Research Project Grant, University of Colorado, 2024, **\$1,000**

CMCI Rubin Family Disinformation Scholarship, University of Colorado, December 2023, **\$500**

“A model of narrative reinforcement on a dual-layer social network”, Sandia National Labs: Laboratory Directed Research and Development Grant, October 2021 – September 2022, **\$120,000**

“A projected network model of online disinformation cascades”, Sandia National Labs: Laboratory Directed Research and Development Grant, October 2020 – September 2021, **\$150,000**

Professional development

Graduate Workshop on Computational Social Science, Santa Fe, June 2024

Hosted by the Santa Fe Institute

Complex Networks Winter Workshop, Quebec City, December 2023

Hosted by Laval University, Northeastern University, and the University of Vermont

Complex Networks Winter Workshop, Online, January 2021

Complex Networks Winter Workshop, Quebec City, December 2018