Elizabeth Upton

Curriculum Vitae

Williams College
Department of Mathematics and Statistics
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Education

2014 - 2019 **PhD, Statistics**, *Boston University*, Boston, MA
Dissertation: Bayesian Regression for Network Data, Advisor: Luis E. Carvalho

2010 - 2011 **EdM, Teaching and Curriculum**, *Harvard Graduate School of Education*, Cambridge, MA

2003 - 2007 **BS, Interdisciplinary Mathematics and Statistics with a minor in Business Administration**, *University of New Hampshire*, Durham, NH, *Summa Cum Laude*

Professional Experience

2019 - present **Assistant Professor of Statistics**, *Department of Mathematics and Statistics*, Williams College, Williamstown, MA

Teaching Experience

Williams College

Stat458: Generalized Linear Models: Theory and Application. *Fall '22*
Stat346: Regression Theory and Applications. *Fall '21, Spring '22, Spring '23*
Stat342: Introduction to Stochastic Processes. *Fall '19, Spring '22*
Stat201: Statistics and Data Analysis. *Fall '20*
Stat101: Elementary Statistics and Data Analysis. *Fall '19, Spring '20, Fall '21, Spring '21, Fall '22, Spring '23*

Boston University

Statistics Consulting Practicum: Lead Consultant and Lab Instructor. *'17-'18*
Introduction to Stochastic Processes. *Summer '17*
Calculus I. *Summer '17*; Teaching Fellow, *Fall '16*
Elementary Statistics. *Summer '15*

Secondary School

Boston Leadership Institute, Boston MA: Sports Statistics. *Summer '18*
Dexter and Southfield Schools, Brookline MA: AP Statistics, Probability, Pre-Calculus, Geometry, Problem Solving, Algebra II. *'11-'14*
East Boston High School, Boston MA: Teacher Intern. *'10-'11*
Cambridge Harvard Summer Academy, Cambridge MA: Co-Teacher. *Summer '10*

Research Interests

Network Science, Bayesian Statistics, Social Network Analysis for Public Health Research, Applied Statistics, Statistics Education and Pedagogy.

Research Papers

DiGiorgio, A. L., Ma, Y., **Upton, E. M.**, Gopal, S., Robinson, N. J., Susanto, T., Knott, C. D. (2022). Famished Frugivores or Choosy Consumers: A Generalist Frugivore (Wild Bornean Orangutans, Pongo pygmaeus wurmbii) Leaves Available Fruit for Nonfruit Foods. *International Journal of Primatology,* 1-22.

De Veaux, R., Plantinga, A., **Upton, E.** (2022). Are the Handicaps Fair? Age and Participation Effects in

the Dipsea Race. *CHANCE,* 35:4, 40-49.

Upton, E.M., Rudolph, A.E., Ward, P.J., Havens, J.R., and Young, A.M. (2022). Extent and Implications of Omitted Ties on Network Measures in a Longitudinal Social Network Survey of People who Use Drugs. *Drug and Alcohol Dependence,* 109554.

Rudolph, A.E., **Upton, E.**, Young, A.M. and Havens, J.R. (2021). Social network predictors of recent and sustained injection drug use cessation: findings from a longitudinal cohort study. *Addiction,* 116(4), 856-864.

DiGiorgio, A.L., **Upton, E.M.**, Susanto, T.W. and Knott, C.D. (2020). Wild Bornean orangutan (Pongo pygmaeus wurmbii) feeding rates and the Marginal Value Theorem. *American Journal of Primatology,* 82(10), e23183

Rudolph, A., **Upton, E.**, McDonald, M., Young, A. and Havens, J., (2020). Peer Influence of Injection Drug Use Cessation Among Dyads in Rural Eastern Kentucky. *International Journal of Drug Policy,* 85, 102604.

Upton, E. and Carvalho, L., *Bayesian Network Regularized Regression for Modeling Urban Crime Occurrences.* https://arxiv.org/abs/1708.05047.

Presentations and Guest Lectures

Conferences

Joint Statistical Meetings. Toronto, Canada, *Extent and implications of omitted ties on local and global network measures.* 2023.

NESS 2022: New England Statistics Symposium. University of Connecticut. *Extent and implications of omitted ties on local and global network measures.* 2022.

NESS 2021: New England Statistics Symposium. Providence, Rhode Island, *Lessons Learned from an Application of Bayesian Network Regularized Regression.* 2021.

Networks 2021: A Joint Sunbelt and NetSci Conference. Virtual Conference, *Extent and implications of forgetting ties on local and global network measures among a sample of rural persons who use drugs.* 2021.

Sunbelt: International Network for Social Network Analysis. Virtual Conference, *Modeling Occurrences of Residential Burglary via Bayesian Network Regularized.* 2020.

Sunbelt: International Network for Social Network Analysis. Montreal QC, Canada, *Examining the Role of Social Norms and Social Influence on Injection Drug Use Cessation.* 2019.

Joint Statistical Meetings. Vancouver, Canada, *Bayesian Network Regularized Regression for Modeling Urban Crime Occurrences.* 2018.

NESS 2017: New England Statistics Symposium. University of Connecticut, Poster: *Bayesian Network Regularized Regression for Modeling Urban Crime Occurrences.* 2017.

Colloquia, Seminars and Guest Lectures

SMALL 2023. Williams College. *Statistics Research Blitz: Networks, Mediation, and Microbiomes, oh my!*

NESS 2023. *Careers in Academia: A Panel Discussion.* 2023.

Williams College. *Relationships count: Using network data to understand social phenomena.* 2022.

Amherst College. *Regression Methods for Network Indexed Data: Modeling Occurrences of Burglary and Identifying Correlates of Injection Drug Use Cessation.* 2020.

Williams College. *Regression Methods for Network Indexed Data: Modeling Occurrences of Burglary and Identifying Correlates of Injection Drug Use Cessation.* 2019.

Bentley University. *Regression Methods for Network Indexed Data.* 2019.

Middlebury College. *Regression Methods for Network Indexed Data: Modeling Occurrences of Burglary in Boston, MA.* 2019.

Colby College. *Regression Methods for Network Indexed Data: Modeling Occurrences of Burglary in Boston, MA.* 2019.

Williams College. *Regression Methods for Network Indexed Data: Modeling Occurrences of Burglary in Boston, MA.* 2019.

Boston Graduate Math Colloquium, Harvard University. *Network Regularized Regression.* 2018.

Guest Lecturer at Boston University for the following courses: Statistical Analysis of Network Data, Generalized Linear Models, Social Network Analysis for Public Health Research, Basic Statistics and Probability, and Accelerated Introduction to Advanced Methods for Quantitative Research.

Additional Conferences and Workshops Attended

Session Chair, Joint Statistical Meetings, Denver, Colorado, 2019.
Preparing to Teach Workshop, Joint Statistical Meetings, Vancouver, Canada, 2018.
International Society for Bayesian Analysis World Meeting, Sardinia, Italy, 2016.
BU - Keio Workshop, Boston University, 2016.
New England Statistics Symposium, Yale University, 2016.
College Board Advanced Placement Statistics Grading, Kansas City, MO, 2014.
2013 AP Institute, St. Johnsbury, VT, 2013.
Mass Math + Science Initiative Advanced Placement Summer Institute, Waltham, MA, 2011.

Awards

- 2023, American Postdoctoral Research Leave Fellowship, AAUW: Alternate
- 2018, Outstanding Teaching Fellow Award, College of Arts and Sciences, Boston University.
- 2017, New England Statistics Symposium: IBM Best Paper Award.
- 2014 - 2016, Clare Boothe Luce Graduate Fellowship.
- 2014 - 2018, Boston University Teaching Fellowship.
- 2007, University of New Hampshire: Highest GPA in Major, Honors-in-Major, University Honors, Presidential Scholar.
- 2007, Edward Stolworthy Scholarship, Cogswell Award for Honors, Class of 1993 Endowment for Honors Award.

Student Advising

Honors Theses

- Samantha Kilcoyne, 2023: *Co-Occurrences of Long COVID Symptoms: An Analysis Using the Ising Model and Nodewise Logistic Regression.*
- Joseph LaRocca, 2022: *Homophily, Assimilation, and Drug Use in Rural Eastern Kentucky: An Analysis Using Stochastic Actor-Oriented Models.*

Summer Research

- SMALL REU advisor, 2023: Statistical Approaches to Pattern Matching in Forensic Evidence
- Eamon Gardy, 2022: Adjusted plus/minus statistics in the NBA
- Daniel Lee, 2021: An R primer for introductory statistics courses
- Alan Sun, 2021: Network simulation techniques

Senior Colloquia

- Gracie Guidotti, 2023: Predicting the Distribution of Residential Solar Arrays in the U.S. using Zero-Inflated Regression Models
- Grady Short, 2023: Measuring Centrality of U.S. Supreme Court Decisions
- Isabella Arvello, 2023: Using Social Networks Analysis to Examine the Collective Dynamics of Smoking Behavior
- Shea van den Broek, 2023: Using Statistics to Evaluate the Role of Skill in Daily Fantasy Sports
- Samuel Liu, 2023: Using Super Learning to Predict HIV-1 Drug Resistance
- Daniel Lee, 2023: Getting Sharked! Modeling Depredation Events in Longlining Vessels
- Trang Ngo, 2022: Beauty in the eye of the Statistician: Statistical Image Properties in Traditional Art, Bad Art, and Abstract Art
- Brynn Monihan, 2021: Exploring Classroom Learning Through Social Network Analysis
- Mina Burns, 2021: Profanity and Fear: What Sentiment Analysis Can Tell Us About the GameStop Surge
- Daniel Kacmarek, 2021: Exploring Clustering Techniques in Marathon Running
- Will Conyers, 2020: Is Happiness Contagious? An Answer Using Longitudinal Social Network Analysis
- Madeleine Boutet, 2020: A Network Approach to Analyzing Information Gerrymandering and Undemocratic Decision Making
- Melissa Swann, 2020: An Inhomogeneous Poisson Process for Modeling Neural Spike Data
- Alessandra Miranda, 2020: A Successive Random Sampling Approach to Clustering Global Climate Data and Other Large Datasets
- Ruairi O'Cearuil, 2020: Does My Vote Matter? A Statistical Approach to Determining Fairness in Electoral Politics

Service

Williams College

2022 - pres Faculty Affiliate: Women's Hockey Team
2022 - 2023 Science Executive Committee
2022 - 2023 Standing Grievance Panel
2021 - 2022 Athletics Committee

Boston University

Spring 2018 Founder and Organizer of Student Network Seminar

- Established a student led seminar focused on topics in network statistics.

- Arranged and chaired weekly meetings consisting of guest speakers or discussions of selected papers.

Spring 2018 Mathematics Department Teaching Seminar Lead

- Coordinated and developed semester long seminar for first year teaching fellows.
- Discussed teaching methods, teaching philosophies, and logistics to assist students in planning accelerated summer courses.

Academic Service

2023 NESS 2023 Program Committee

2023 NESS 2023 Statathon: Guest Judge

2021 - pres Associate Editor: The New England Journal of Statistics in Data Science

2020 - pres NextGen Committee Member

2019- pres Manuscript Review: Sankhya A, Addiction, Statistics Education Research Journal, Journal of Statistics and Data Science Education

Professional Memberships and Community Involvement

INSNA International Network for Social Network Analysis

ASA American Statistical Association

ISBA International Society of Bayesian Analysis

BUSCASA Boston University Student Chapter of the American Statistical Society, 2015 - 2019

- Served on leadership board for the 2015 - 2016 year.

Relevant Work Experience

2010 - 2011 Research Assistant, *Professor Jon R. Star, Harvard Graduate School of Education*, Cambridge, MA

2007 - 2010 Quantitative Investment Associate, *Putnam Investments, Currency Investment Unit*, Boston, MA

- Built and expanded upon quantitative predictors of currency appreciation while employing a variety of statistical analyses and database software applications.