

Hope Johnson | Curriculum Vitæ

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Education

Macalester College

B.A., Statistics, Economics

St. Paul, MN

2013–2017

- Cumulative GPA: 3.65
- Statistics Honors Thesis: "A Statistical Analysis of Body-Worn Cameras in Officer-Involved Shootings"
- Economics Capstone: "Natural Disasters and Mobile Banking Adoption in 55 Developing Countries"

Independent Research

A Statistical Analysis of Body-Worn Cameras in Officer-Involved Shootings

Statistics Honors Thesis

Aug. 2016 – May 2017

- Specify a zero-inflated negative binomial regression to analyze the relationship between body-worn cameras and victim race in officer-involved shootings.

Racial Difference in the Predictive Accuracy of a Recidivism Risk Assessment Instrument

Survival Analysis Term Paper

Fall 2016

- Test if the COMPAS recidivism risk assessment tool predicts the risk of recidivism with equal accuracy across races using a Cox proportional hazards model;
- Awarded first place in the American Statistical Association's undergraduate research paper competition (USRESP).

Natural Disasters and Mobile Banking Adoption

International Development Term Paper

Fall 2016

- Analyze whether a country-wide environmental shock is associated with increasing adoption of mobile banking in 55 developing countries.

Heroin and Naloxone: Disentangling an Epidemic

Econometrics Term Paper

Spring 2016

- Investigate the impact of making naloxone available to heroin users;
- Awarded third place in the Minnesota Economic Association's undergraduate research paper competition.

Farmers' Networks and Extreme Weather Events

Environmental Policy Term Paper

Fall 2015

- Develop a Bayesian decision-tree to model the likelihood that a farmer takes signals from members of their network.

Can Water Be Efficiently Allocated Through Price Policy?

Agricultural Economics Term Paper

Fall 2016

- Empirically investigate three water pricing mechanisms to assess how each maximize social benefit.

Experience

Mathematica Policy Research

Cambridge, MA

Junior Front-End Data Scientist

Sept. 2017–present

- Develop and implement statistical network analyses to evaluate a primary care delivery program;
- Perform Bayesian statistical analysis to assess the impact of Medicaid/Medicare intervention programs;
- Simulate correlated patient-level data for regression testing;
- Innovate measure scores to quantify things like coordination of care in medical practices;
- Create polished data visualizations and dashboards using D3.js, Plotly (Julia), and ggplot (R).

Bill & Melinda Gates Foundation

Seattle, WA

Data Visualization Consultant

Dec. 2016–June 2017

- Clean survey data from Kenyan households on health service access;
- Visualize gaps between health services and patient care using Tableau;
- Prepare visuals, analysis, and discussion for forthcoming articles in the Journal of Infectious Disease.

Educating Sustainability Ambassadors Initiative

St. Paul, MN

Data Science Research Analyst

June - Aug. 2016

- Map farm-to-school programs and educational attainment gaps in Minnesota;
- Construct a linear mixed-effects model to describe the relationship between farm-to-school programs and student outcomes in Minnesota.

Crossroads Resource Center

Minneapolis, MN

Empirical Research Assistant

June - Aug. 2015

- Researched the economics of local food supply chains in St. Paul and Minneapolis.

Information Technology

Advanced Proficiency: R, Julia, Stan, LaTeX, Git, Stata, Microsoft Office

Intermediate Proficiency: Python, D3.js, Node.js, JavaScript, HTML, CSS, Processing, Tableau

Basic Proficiency: SQL, SAS

Awards, Grants, and Honors

Recipient of the David Bressoud prize for excellent communication skills in mathematics 2017

Eyeo Festival Student Grant 2017

1st place, undergraduate research paper contest winner (American Statistical Association) 2017

3rd place, term paper contest winner (Minneapolis Federal Reserve) 2016

Educating Sustainability Ambassador (Howard Hughes Medical Institute/Macalester College)	2016
Omicron Delta Epsilon Economics Honors Society Member	2016
Dean's List (Macalester College)	2013-14
DeWitt Wallace Distinguished Scholar	2013-2017

Presentations and Conferences

Harvard University Center for Geographic Analysis

Illuminating Space and Time in Data Science
 "Spatio-temporal Network Analysis"

April 2018

Macalester College

Honors Defense - Department of Applied Mathematics
 "A Statistical Analysis of Body-Worn Cameras in Officer-Involved Shootings"

April 2017

Northwestern University

Graduate Research Opportunities for Women in Mathematics (GROW) Conference
 "Summer Research as an Undergraduate"

Oct. 2016

Languages

English: Fluent

French: Intermediate

Arabic: Basic

Bambara: Basic

Conversational

Basic words and phrases only

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