Elisabeth Paulson

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Interests

Analytics for social good, public sector operations, operations research

Academic positions

Harvard Business School, Harvard University, Cambridge, MA
Technology and Operations Management Unit
Assistant Professor — July 2022 –
Visiting Postdoctoral Fellow — July 2021–July 2022

Stanford University, Stanford, CA — July 2021 – July 2022
Postdoctoral Fellow, Immigration Policy Lab

Education

Massachusetts Institute of Technology, Cambridge, MA
PhD in Operations Research — September 2016 – May 2021
Advisors: Prof. Retsef Levi and Prof. Georgia Perakis
Thesis: *Healthy Food Access and Consumption: Informing Interventions Through Analytics*
Supported by the NSF Graduate Research Fellowship (2016-2019)

The Pennsylvania State University, Schreyer Honors College, University Park, PA
M.A. in Mathematics — August 2013 – May 2015
Advisor: Prof. Christopher Griffin
Thesis: *A Reformulation of the CSSR Algorithm and Application to Optimal Deception Strategy in Two Player Games*
B.A. in Mathematics — August 2011 – May 2015
B.A. in Statistics — August 2011 – May 2015

Awards/Honors

- 2nd place, POMS College of Supply Chain Management Best Student Paper Competition — 2021
- Finalist, POMS College of Sustainable Operations Best Student Paper Competition — 2021
- Finalist, IBM Best Student Paper Award — 2019
- NSF Graduate Fellowship — 2016 – 2019
- Gerard L. Bayles Memorial Scholarship — 2011–2015
- Kermit C. Anderson Memorial Award in Mathematics — 2014
- Mary Lister McCammon Award in Mathematics — 2013
- Merit Scholarship, Mathematics Advanced Study Semester — 2012

Papers

Submitted, under revision, and working

R1. Group Fairness in Dynamic Refugee Assignment. D. Freund, T. Lykouris, B. Sturt, and W. Weng. Under review.

R2. Outcome-Driven Dynamic Refugee Assignment with Allocation Balancing. K. Bansak and E. Paulson. Under review.

- Accepted to the 23rd ACM Conference on Economics and Computation (EC '22)

R3. Optimal Interventions for Healthy Food Consumption Among Low Income Households. R. Levi, E. Paulson, and G. Perakis. Major Revision, *Management Science*.

- Finalist, POMS College of Supply Chain Management Best Student Paper Competition (2021)

- Finalist, IBM Best Student Paper Award (2019)
- Accepted for oral presentation, Workshop on Mechanism Design for Social Good (2020) (acceptance rate 29%)

R4. Reverse Information Sharing: Reducing Costs in Supply Chains with Yield Uncertainty. A. Jagmohan, P. Harsha, R. Levi, E. Paulson, and G. Perakis. R&R, *Management Science*.

- 2nd place, POMS College of Sustainable Operations Best Student Paper Competition (2021)

R5. Impact of Access and Value on Fresh Food Consumption: Policy Implications. R. Levi, E. Paulson, and G. Perakis. R&R, *Food Policy*.

Published

P1. Public Health Risks Arising from Food Supply Chains: Challenges and Opportunities. L. Chen, D. Guttieres, R. Levi, E. Paulson, G. Perakis, N. Renegar, S. Springs. *Naval Research Logistics*, special issue on OR Models for Developmental Studies, 2021.

P2. Cooperation Can Emerge in Prisoner's Dilemma from a Multi-Species Predator Prey Replicator Dynamic (2016). E. Paulson and C. Griffin. *Mathematical Biosciences*, 178 p.56-62.

P3. A Game Theoretic Model for Resource Allocation Among Countermeasures with Multiple Attributes (2016). E. Paulson, I. Linkov, and J. Keisler. *European Journal of Operations Research*, 252 p.610-622. DOI: 10.1016/j.ejor.2016.01.026.

P4. Deriving and Optimally Deceptive Policy in Two-Player Iterated Games. E. Paulson and C. Griffin. American Control Conference, 2016.

P5. Optimal Process Control of Symbolic Transfer Functions. C. Griffin and E. Paulson. Feedback Computing, 2015.

P6. Better Timing of Cyber Conflict. E. Paulson and C. Griffin. Third ASE Conference on Cyber Security, 2014.

Teaching

Harvard Business School, Boston, MA

- Technology and Operations Management — Fall 2022

Massachusetts Institute of Technology, Cambridge, MA

- 15.370 - Data, Models, and Decisions — Spring 2020
  Teaching assistant for core Executive MBA class.
  TA evaluation score: 6.73/7
- 15.S60 - Computating in Optimization and Statistics — January 2020
  3-hour session on machine learning in R for PhD students
- 15.S41 - Software Tools for Business Analytics — January 2020
  Taught a 3-hour session on machine learning in R to MIT undergrads
- 15.734 - Intro to Operations Management — Summer 2018
  Teaching assistant for core Executive MBA class.
  TA evaluation score: 6.26/7

- Microsoft Excel Training — Spring 2018, 2019
  Co-taught Microsoft Excel training for Executive MBA students (three 3-hour sessions).
- 15.731 - Risk Management — January 2018
  Teaching assistant for Executive MBA elective on risk management (two full-day sessions).
  TA evaluation score: 7/7

Invited Talks

Outcome-Driven Dynamic Refugee Assignment with Allocation Balancing.

- London Business School: December 2021

Short-term Outcomes for Long-term Goals in Dynamic Refugee Matching.

- Stanford Causal Science Conference: November 2021

Healthy Food Consumption: Empirical Analysis and Optimization Models of Government Interventions.

- Penn State College of Medicine: March 2021

Optimizing Group-level Food Policy Interventions.

- Stanford GSB: October 2021
- USC, Marshall Business School: January 2021
- UCLA, Anderson School of Business: January 2021
- Georgia Tech, ISyE: January 2021
- Naval Postgraduate School, OR: January 2021
- Harvard Business School: January 2021
- Columbia Business School: January 2021
- UBC, Sauder School of Business: December 2021
- University of Minnesota, ISyE: December 2020
- Boston College, Carrol School of Management: December 2020
- Wisconsin School of Business, UW Madison: December 2021
- UC Berkeley, Haas School of Business: December 2020
- Dartmouth, Tuck School of Business: November 2020
- MIT, Sloan School of Management: November 2020

Optimal Interventions for Healthy Food Consumption Among Low Income Households.

- Kellogg-Wharton OM Workshop: July 2020
- Health Systems Innovation Seminar Series, MIT Sloan: April 2019

Conference Presentations

Group Fairness in Dynamic Refugee Assignment.

- INFORMS '22

Outcome-Driven Dynamic Refugee Assignment with Allocation Balancing.

- ACM EC '22, MSOM '22

Reverse Information Sharing: Reducing Waste and Costs in Supply Chains with Yield Uncertainty.

- POMS '21, INFORMS '20

Fair Group-level Intervention Bundles.

- INFORMS '21, INFORMS '20

Optimal Interventions for Healthy Food Consumption Among Low Income Households.

- POMS '21, Workshop on Mechanism Design for Social Good '20, INFORMS Annual Meeting '19, INFORMS Annual Meeting '18

Impact of Access and Value on Fresh Food Consumption: Policy Implications.

- MSOM '18, INFORMS '17

Choosing What to Protect, and How: Resource Allocation Among Countermeasures With Multiple Attributes.

- INFORMS '14

Industry experience

IBM Blockchain Solutions, Yorktown Heights, NY — June 2019 – August 2019
Research intern

Booz Allen Hamilton, Annapolis Junction, MD — July 2015 – June 2016
Data Scientist

Bates White, Washington, D.C. — June 2014-August 2014
Summer consultant intern

U.S. Army Engineer Research and Development Center, Concord, MA — June 2013 – August 2013
Research intern with the Risk and Decision Science Team
Part of the DHS HS-STEM Summer Internship program

Service

Reviewer for *M&SOM*, *Operations Research*, *POM*
Program Committee, ACM EAAMO Conference 2021
Area Chair, ACM EAAMO Conference 2022
Judge for the 2021 INFORMS Public Sector OR Best Paper Award