Lauren N. Steimle

Harold R. and Mary Anne Nash Early Career Professor and Assistant Professor

H. Milton Stewart School of Industrial and Systems Engineering
College of Engineering
Georgia Institute of Technology
Atlanta, GA 30332-0760, USA

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H. Milton Stewart School of Industrial and Systems Engineering
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September 1, 2023

Earned Degrees

Ph.D.	University of Michigan, *Industrial & Operations Engineering* *Advisor:* Brian T. Denton	05/2019
M.S.E.	University of Michigan, *Industrial & Operations Engineering*	04/2016
B.S.	Washington University in St. Louis, *Systems Science & Engineering* *Minor:* Operations & Supply Chain Management Graduated *summa cum laude*	05/2014

Employment History

Georgia Institute of Technology
H. Milton Stewart School of Industrial & Systems Engineering
Harold R. and Mary Anne Nash Early Career Professor — *08/2023–present*
Assistant Professor — *01/2020–present*

University of Michigan
Department of Industrial & Operations Engineering
Research Fellow — *05/2019–12/2019*

I. Honors and Awards

A. International or National Awards

*Awards given to mentored students for joint work

11. *IISE Transactions* Focus Issue on Operation Engineering & Analytics, Best Paper — 2023
10. INFORMS Service Science Best Cluster Paper Award, Finalist — 2022
9. INFORMS Minority Issues Forum Poster Competition, 1st Place* — 2022
    Awarded to Ph.D. student Meghan Meredith
    INFORMS Annual Meeting, Indianapolis, IN
8. Society of Women Engineers Collegiate "Rapid Fire" Competition, Finalist* — 2022
    Awarded to undergraduate student Madeleine Pollack
    Society of Women Engineers Annual Conference (WE22), Houston, TX
7. INFORMS Undergraduate Research Award, Honorable Mention* — 2019
    Awarded to Vinayak Ahluwalia, advised as a graduate student with Brian T. Denton
    INFORMS Annual Meeting, Seattle, WA

6. IISE Doctoral Colloquium Poster Competition, Award Winner 2019
   Institute of Industrial & Systems Engineering Annual Meeting, Orlando, FL

5. INFORMS Judith Liebman Award 2018
   Institute for Operations Research and the Management Sciences (INFORMS)
   Recognizes students volunteers who who have been "moving spirits" in their universities, student chapters, and the Institute

4. New England Journal of Medicine SPRINT Data Analysis Challenge, 3rd place 2017
   3rd place team (out of 143 teams)
   Development and Validation of a Clinical Decision Score to Maximize Benefit and Minimize Harm from Intensive Blood Pressure Treatment
   Team: Sanjay Basu, Jeremy B. Sussman, Joeseph Ridgon, Lauren N. Steimle, Brian T. Denton, Rodney A. Hayward
   Award Amount: $3,000

3. INFORMS Minority Issues Forum Poster Competition, Honorable Mention 2017

2. National Science Foundation Graduate Research Fellowship 2016

1. Ford Foundation Fellowship Predoctoral Competition, Honorable Mention 2016

B. Institute or School Awards

6. Student Recognition of Excellence in Teaching, Georgia Tech
   Spring Semester 2023 CIOS Honor Roll, ISyE 3232 2023
   Spring Semester 2022 CIOS Honor Roll, ISyE 3232 2022

5. Georgia Tech's Nominee for Johnson & Johnson's STEM2D Scholar Award 2022
   Selected as the institute's nominee in the "Technology" category

4. ISyE Diversity, Equity, and Inclusion Fellow, Georgia Tech 2021-22

3. Thank a Teacher Certificate, Georgia Tech
   Received 3 certificates for offerings of ISyE 3232 2021-2022
   Received a certificate for offerings of ISyE 6664 2022

2. Social Impact Award 2019
   Engineering Graduate Symposium, Advanced Graduate Student Research Division
   University of Michigan, Ann Arbor, MI

1. The Gregory Sullivan Award for Professional Achievement 2014
   Department of Electrical & Systems Engineering, Washington University in St. Louis
   Awarded to an undergraduate student in the Electrical & Systems Engineering department for outstanding professional achievement

C. National Honors and Awards Received by Advised Students

4. National Defense Science and Engineering Graduate (NDSEG) Fellowship 2023-2026
   Awarded to Abel Sapirstein

3. National Science Foundation Graduate Research Fellowship
   Awarded to Abel Sapirstein 2023-2026
   Awarded to Meghan Meredith 2022-2025

2. Adobe Women In Technology Scholarship 2022
   Awarded to Madeleine Pollack

1. Computing Research Association Outstanding Undergraduate Researcher Award, Honorable Mention — 2019
   Awarded to Vinayak Ahluwalia, advised as a graduate student with Brian T. Denton

II. Research, Scholarship, and Creative Activities

Bold: Georgia Tech student/ postdoc author
Underline: Undergraduate student author
†: Author order is student(s) followed by advisor (or co-advisor in alphabetical order) followed by other contributors.

A. Refereed Book Chapters

[2] **Amaya McNealey**, Wesley J. Marerro, Lauren N. Steimle, Gian-Gabriel P. Garcia. (2022). "Optimizing Interpretable Treatment and Screening Policies in Healthcare." In: *Encyclopedia of Optimization*. Third, Springer New York (Accepted & Forthcoming).

[1] Lauren N. Steimle, Brian T. Denton. "Markov decision processes for screening and treatment of chronic diseases." In *Markov Decision Processes in Practice*, pp. 189-222. Springer, Cham, 2017.

B. Refereed Publications and Submitted Articles

B.1. Published and Accepted Journal Articles

[11] Gian-Gabriel P. Garcia, Lauren N. Steimle, Wesley J. Marrero Colon, Jeremy B. Sussman, "Interpretable Policies and the Price of Interpretability in Hypertension Treatment Planning." *Manufacturing and Service Operations Management*[1] (Accepted on May 19, 2023; Available through MSOM's Articles in Advance).

[10] **Vedant Das Swain**, **Jiajia Xie**, **James Cai**, **Sonia Sargolzaei**, **Maanit Madan**, Munmun De Choudhury, Gregory D. Abowd, Lauren N. Steimle, and B. Aditya Prakash. (2023) "Empirical networks for localized COVID-19 interventions using WiFi infrastructure at university campuses." *Frontiers in Digital Health*, 5, 1060828.

[9] Sheila A.M. Rauch, Lauren N. Steimle, **Jingyu Li**, Kathryn Black, Maria Nylocks, Samantha Patton, Anna Wise, Laura Watkins, Monika Stojek, Jessica Maples-Keller, Carly Yaskinski, Barbara Rothbaum.(2022) "Frequency and correlates of suicidal ideation and behaviors in treatment-seeking post-9/11 veterans." *Journal of Psychiatric Research*, 155: 559-566.

[8] † **Mehran Navabi-Shirazi**, **Mohamed El Tonbari**, Natashia Boland, Dima Nazzal, Lauren N. Steimle. (2022) "Multi-criteria Course Mode Selection and Classroom Reassignment Under Sudden Space Scarcity." *Manufacturing & Service Operations Management*,[1] 24(6):3252-3268.

- 2022 INFORMS Service Science Best Cluster Paper Award, Finalist
- Featured in M&SOM's Virtual Special Issue, "The Impact of Operations in the COVID-19 Pandemic"

[7] † **Zhuoting Yu**, Pinar Keskinocak, Lauren N. Steimle, Inci Yildirim. (2022) "The Impact of Testing Capacity and Compliance with Isolation on COVID-19: A Mathematical Modeling Study." *AJPM Focus*, 1 100006.

[1] One of the top-ranking Management Science/Operations Research journals, in FT 50 list

[6] Lauren N. Steimle, **Yuming Sun**, **Lauren Johnson**, Tibor Besedes, Patricia Mokhtarian, & Dima Nazzal. (2022) "Students' Preferences for Returning to Colleges and Universities During the COVID-19 Pandemic: A Discrete Choice Experiment." *Socio-Economic Planning Sciences* 82PB 101266.

[5] Lauren N. Steimle, Joshua Havumaki, Marissa C. Eisenberg, , Joseph N. Eisenberg, Lisa A. Prosser, Jamison Pike, , Ismael R. Ortega-Sanchez, Claire P. Mattison, Aron Hall, Molly K. Steele, Ben A. Lopman, & David W. Hutton (2021). "Cost-effectiveness of pediatric norovirus vaccination in daycare settings." *Vaccine*, 39(15), 2133-2145.

[4] Lauren N. Steimle, David L. Kaufman, & Brian T. Denton (2021). "Multi-model Markov decision processes." *IISE Transactions*, 53(10), 1124-1139.

- Feature article in Sept. 2021 issue of IISE's *Industrial and Systems Engineer* magazine

[3] Lauren N. Steimle, Vinayak S. Ahluwalia, Charmee Kamdar, & Denton, B. T. (2021). "Decomposition methods for solving Markov decision processes with multiple models of the parameters." *IISE Transactions*, 53(12), 1295-1310.

- Best Paper, 2023 *IISE Transactions* Focus Issue on Operation Engineering & Analytics

[2] Vinayak S. Ahluwalia, Lauren N. Steimle, & Brian T. Denton (2021). "Policy-based branch-and-bound for infinite-horizon Multi-model Markov decision processes." *Computers & Operations Research*, 126, 105108.

[1] Sanjay Basu, Jeremy B. Sussman, Jospeh Rigdon, Lauren N. Steimle, Brian T. Denton, & Rodney A. Hayward (2017). "Benefit and harm of intensive blood pressure treatment: derivation and validation of risk models using data from the SPRINT and ACCORD trials." *PLoS medicine*[2], 14(10), e1002410.

- Cited in the American Diabetes Association's guidelines for cardiovascular disease and risk management, 2020 – 2022

B.2. Conference Presentations with Proceedings (Refereed)

[2] † **Yuming Sun**, Pinar Keskinocak, Lauren N. Steimle, Stephanie Kovacs, Steve Wassilak."A Compartmental Simulation Model to Improve Interventions for Controlling Poliovirus Outbreaks." In *Proceedings of the 2023 Winter Simulation Conference* (Accepted).

[1] Lauren N. Steimle , David L. Kaufman, Brian .T. Denton, "Multi-model Markov decision processes: A new method for mitigating parameter ambiguity", in *Healthcare Special Interest Group of the Manufacturing and Service Operations Management Conference 2018.*

B.3. Submitted Journal Articles

[7] † **Yuming Sun**, Pinar Keskinocak, Lauren N. Steimle, Stephanie Kovacs, Steve Wassilak. "Outbreak response strategies to eliminate circulating vaccine-derived poliovirus: A case study of Serotype 2 in Northern Nigeria".

[6] † **Meghan Meredith**, Lauren N. Steimle, Stephanie Radke. "Effectiveness of facility expansion to reduce the number of reproductive-aged women living in 'obstetric deserts': a decision-analytic analysis of Georgia".

[2] 2017 Impact Factor: 11.675

[5] †**Emma Wu**, **Hanna Hamilton**, **Liam Jagrowski**, Dima Nazzal, Lauren N. Steimle. "Revisiting the small-world property of co-enrollment networks: A network analysis of hybrid course delivery strategies". (2022) Under second review, available at *OSF Preprints*.

[4] †**Meghan Meredith**, Lauren N. Steimle, Kaitlyn Stanhope, Marissa Platner, Sheree Boulet. "Racial/Ethnic Differences in Pre-Pregnancy Conditions and Adverse Maternal Outcomes in the nuMoM2b Cohort ". Under review, available at *medRxiv*

[3] **Abel Sapirstein**, Arthi Rao, Lauren N. Steimle. "Alignment of community benefit spending and initiatives to improve community health: Is there evidence of progress?"

[2] **Madeleine Pollack**, Lauren N. Steimle. "The Implications of State Aggregation on the Utility of Estimated Markov Decision Processes." Under revision, available at: *OSF Preprints*.

[1] Yuanhui Zhang, Lauren N. Steimle, Brian T. Denton. "Robust Markov decision processes for medical treatment decisions." Under revision, available at *Optimization Online*.

C. Other Publications and Creative Products

C.1. Software and Archived Datasets

[2] COVID-19 Campus Recovery Analytics: Open-source code repository for sharing tools and code to help campus planners make decisions about a return to campus during COVID-19 https://github.com/COVID19-Campus-Recovery/campus-recovery-modeling

- *Socially-distanced classroom layout designer:* A tool for campus planners to create classroom layouts that allow for social distancing. The layouts can help planners better estimate their classrooms' capacities under social distancing policies. This tool has been used by researchers at Georgia Tech and University of Michigan to create classroom layouts and estimate classroom capacities under social distancing policies during the COVID-19 pandemic.
- *Course mode and classroom assignment optimization model*: We are created a tool to help campus planners identify which classes should be assigned to which rooms and alternative modes of course delivery (e.g., hybrid models where some classes are delivered online) in a way that accounts for reduced room capacities (to accomodate social distancing)

[1] Dataset of test instances of Markov decision processes with multiple models [Data set], University of Michigan - Deep Blue Data. https://doi.org/10.7302/2frp-2m36

- This repository includes test instances of infinite-horizon Markov decision processes with multiple models of parameters (i.e., "Multi-model Markov decision processes" (MMDPs)) and was created to enable future research on MMDPs. We generated each test instance in the dataset using a Python script. The test instances can be read in using C++ and Python script.

C.2. Opinion Editorials

[2] Lauren Steimle and Dima Nazzal. "Georgia Tech researchers: Colleges too optimistic about social distancing". The Atlanta Journal-Constitution. June 26, 2020.

[1] Lauren Steimle and Dima Nazzal. "Does a 'return to campus' translate to a return to the classroom?". ORMS Today, August 2020.

C.3. Posters

[12] "Design, Analysis, and Optimization of Interpretable Policies for Hypertension Treatment Planning." Presenter: G.-G. P. Garcia. Other co-authors: W. J. Marrero, and J. B. Sussman. Society for Medical Decision Making 44th Annual Meeting, Seattle, WA. October 2022.

[11] "Data Science Models for the Prediction of Adverse Maternal Outcomes". Presenter: **Meghan Meredith**. Other co-authors: Sheree Boulet, Kait Stanhope, Marissa Platner. INFORMS Annual Meeting, Indianapolis, IN. October 2022.

- 1st place, Minority Issues Forum Poster Competition

[10] "The implication of state aggregation in Markov decision processes with medical applications". Presenter: **Madeleine Pollack**. INFORMS Annual Meeting, Indianapolis, IN. October 2022.

[9] "The implication of state aggregation in Markov decision processes with medical applications". Presenter: **Madeleine Pollack**. 2021 SWE National Conference (Virtual). October 2021. Finalist, Undergraduate Poster Competition.

[8] "The implication of state aggregation in Markov decision processes with medical applications". Presenter: **Madeleine Pollack**. 2021 IEEE MIT Undergraduate Technology Research Conference (URTC). October 2021.

[7] "The implication of state aggregation in Markov decision processes with medical applications". Presenter: **Madeleine Pollack**. Georgia Institute of Technology Undergraduate Research Symposium. April 2021.

- 3rd place, College of Engineering Poster Competition

[6] "Stochastic dynamic optimization under ambiguity". Co-Author: Brian Denton. Invited Poster for the *Institute for Industrial and Systems Engineering Doctoral Colloquium*. May 2019.

- 3rd place, Doctoral Colloquium Poster Competition

[5] "Data-Driven Sequential Decision Making under Data Uncertainty and Model Ambiguity with Applications to Medical Decision Making". Co-Author: Brian Denton. University of Michigan Engineering Graduate Symposium, Ann Arbor, MI. October 2018.

- Winner, Social Impact Award, Advanced Graduate Research Competition

[4] "Stochastic dynamic optimization under ambiguity with applications to medical decision making". Co-Authors: Brian Denton & David Kaufman. Minority Issues Forum, INFORMS Annual Meeting, Phoenix, AZ. October 2018.

[3] "Mitigating ambiguity in Markov decision processes using multiple models of parameters". Co-Authors: Brian Denton & David Kaufman. Michigan Student Symposium for Interdisciplinary Statistical Sciences. October 2017.

[2] "Mitigating ambiguity in Markov decision processes using multiple models of parameters". Co-Authors: Brian Denton & David Kaufman. Minority Issues Forum, INFORMS Annual Meeting, Houston, TX. October 2017.

- Honorable Mention, Minority Issues Forum Poster Competition

[1] "Contextual Markov decision processes for robust dynamic programming". Co-Authors: Brian Denton & David Kaufman. Engineering Graduate Symposium, University of Michigan, Ann Arbor, MI. November 2016.

C.4. Dissertations

[1] Lauren N. Steimle, "Stochastic dynamic optimization under ambiguity", Ph.D. Dissertation, Industrial and Operations Engineering, University of Michigan, 5/2019.

D. Presentations

D.1. Keynote Addresses and Plenary Lectures

[1] *Leveraging problem structure to solve robust Markov decision processes* (Plenary Talk) YinzOR Student Conference, Pittsburgh, PA, August 2018.

D.2. Invited Conference and Workshop Presentations

[32] "A Model-based Study to Inform Prevention and Outbreak Response Strategies to Eliminate Circulating Vaccine-derived Poliovirus Type 2." Presenter: Lauren N. Steimle. Other co-authors: **Yuming Sun**, Pinar Keskinocak, Stephanie Kovacs. INFORMS Healthcare Conference, Toronto, Canada, July 2023.

[31] "Equitable Access to Specialist Cancer Care in Rwanda: A Network Design Approach" Presenter: **Abel Sapirstein**. INFORMS Healthcare Conference, Toronto, Canada, July 2023

[30] "A Model-based Study to Inform Prevention and Outbreak Response Strategies to Eliminate Circulating Vaccine-derived Poliovirus Type 2." Presenter: Lauren N. Steimle. Other co-authors: **Yuming Sun**, Pinar Keskinocak, Stephanie Kovacs. IISE Annual Meeting, New Orleans, LA, May 2023.

[29] "A Model-based Study to Inform Prevention and Outbreak Response Strategies to Eliminate Circulating Vaccine-derived Poliovirus Type 2." Presenter: Lauren N. Steimle. Other co-authors: **Yuming Sun**, Pinar Keskinocak, Stephanie Kovacs. IISE Annual Meeting, New Orleans, LA, May 2023.

[28] "Multi-criteria Course Mode Selection and Classroom Assignment Under Sudden Space Scarcity" Presenter: Lauren N. Steimle. Co-authors: **Mehran Navabi-Shirazi**, **Mohamed El Tonbari**, Dima Nazzal, Natashia Boland. INFORMS Annual Meeting, Indianapolis, IN, October 2022

[27] "A Model-based Study Of Preventions And Outbreak Response Options To Eliminate Circulating Vaccine-derived Poliovirus Type 2" Presenter: **Yuming Sun**. Co-authors: Pinar Keskinocak, Stephanie Kovacs, Lauren N. Steimle. INFORMS Annual Meeting, Indianapolis, IN, 2022.

[26] "Machine Learning To Estimate Risk Of Adverse Maternal Outcomes In A Cohort Of Nulliparous Women" Presenter: Lauren N. Steimle. Co-author: **Meghan Meredith**. INFORMS Annual Meeting, Indianapolis, IN, October 2022.

[25] "Design And Analysis Of Interpretable Policies For Hypertension Treatment Planning". Presenter: Gian-Gabriel P. Garcia. Co-authors: G Wesley J. Marrero, Jeremy B. Sussman, Lauren N. Steimle. INFORMS Annual Meeting, Indianapolis, IN, October 2022.

[24] "Helping Colleges Respond To COVID-19: Multi-objective Optimization To Address Sudden Classroom Space Scarcity Due To Social Distancing" Presenter: Lauren N. Steimle. Co-authors: **Mehran Navabi-Shirazi**, **Mohamed El Tonbari**, Dima Nazzal, Natashia Boland. 2022 CORS/INFORMS International Conference, Vancouver, CA, June 2022.

[23] "Strategies for the mitigation of statistical error in Markov decision processes for medical treatment decisions". Presenter: **Madeleine Pollack**. Co-authors: Lauren N. Steimle. IISE Annual Meeting, Seattle, WA. May, 2022.

[22] "An Analysis of Structured Optimal Policies for Hypertension Treatment Planning: The Trade-off Between Optimality and Interpretability". Presenter: Gian-Gabriel P. Garcia. Co-authors: Wesley J. Marrero-Colon, Lauren N. Steimle. Jeremy Sussman. IISE Annual Meeting, Seattle, WA. May, 2022.

[21] "Strategies for responding to vaccine-derived polio outbreaks". Presenter: **Yuming Sun**. Co-authors: Pinar Keskinocak, Lauren N. Steimle. INFORMS Annual Meeting, Anaheim, CA. October 2021.

[20] "The Effectiveness Of Remote And Hybrid Instruction As An Intervention For Covid-19 In University Settings". Presenter: Lauren N. Steimle. Co-authors: **Jingyu Li**, **Meghan Meredith**, Dima Nazzal. INFORMS Annual Meeting, Anaheim, CA. October 2021.

[19] "Multi-criteria Course Mode Selection and Classroom Reallocation during a Sudden Pandemic". Presenter: Lauren N. Steimle. Co-authors: **Mohamed El Tonbari**, **Mehran Navabi-Shirazi**, Dima Nazzal, Natashia Boland. INFORMS Annual Meeting, Anaheim, CA. October 2021.

[18] "An Analysis of Structured Optimal Policies for Hypertension Treatment Planning: The Trade-off Between Optimality and Interpretability". Presenter: Gian-Gabriel P. Garcia. Co-authors: Wesley J. Marrero-Colon, Lauren N. Steimle. INFORMS Annual Meeting, Anaheim, CA. October 2021.

[17] "An Analysis of Structured Optimal Policies for Hypertension Treatment Planning: The Trade-off Between Optimality and Interpretability". Presenter: Gian-Gabriel P. Garcia. Other co-authors: Wesley J. Marrero-Colon, Lauren N. Steimle. INFORMS Healthcare Meeting, Indianapolis, IN. July 2021.

[16] "The Impact of Testing Availability and Compliance with Self-isolation on Covid-19: A Mathematical Modeling Study". Presenter: **Zhuoting Yu**. Other co-authors: Lauren N. Steimle, Pinar Keskinocak. INFORMS Healthcare Meeting, Indianapolis, IN, July 2021.

[15] "Cost-Effectiveness of a Potential Norovirus Vaccine". Presenter: Lauren N. Steimle. IISE Annual Meeting, Virtual (due to COVID-19). October 2020.

[14] "Sensitivity of Preventive Decisions for Deteriorating Markovian Systems". Presenter: Lauren N. Steimle Other co-author: Brian Denton. INFORMS Annual Meeting, Seattle, WA. October 2019.

[13] "A branch-and-bound framework for infinite-horizon multi-model Markov decision processes". Presenter: Vinayak Ahluwalia. Co-Authors: Brian Denton and Lauren N. Steimle. INFORMS Annual Meeting, Seattle, WA. October 2019.

- Honorable Mention, *INFORMS Undergraduate Operations Research Prize*

[12] "Cost-Effectiveness of a Potential Norovirus Vaccine". Presenter: David Hutton. Co-Authors: Lauren N. Steimle. INFORMS Annual Meeting, Seattle, WA. October 2019.

[11] "Cost-Effectiveness of a Potential Norovirus Vaccine". Presenter: David Hutton. Co-Authors: Lauren N. Steimle. INFORMS Healthcare, Cambridge, MA. July 2019.

[10] "Sensitivity of Preventive Health Intervention Decisions in Markov Decision Processes". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. INFORMS Healthcare, Cambridge, MA. July 2019.

[9] "Decomposition methods to design robust policies for Markov decision processes". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. Institute for Industrial and Systems Engineers Annual Meeting, Orlando FL. May 2019.

[8] "Leveraging decomposition methods to design robust policies for Markov decision processes". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. INFORMS Annual Meeting, Phoenix, AZ. October 2018.

[7] "Leveraging stochastic programming to design robust policies for Markov decision processes". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. International Symposium on Mathematical Programming, Bordeaux, France. July 2018.

[6] "Multi-model Markov decision processes: A new method for mitigating parameter ambiguity". Presenter: David Kaufman;. Co-authors: Brian Denton and Lauren N. Steimle. Healthcare Special Interest Group. Manufacturing and Service Operations Management Conference, Houston, TX. July 2018.

[5] "Mitigating ambiguity in Markov decision processes using multiple models of parameters". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. and David Kaufman. INFORMS Annual Meeting, Houston, TX. October 2017.

[4] "Optimizing medical treatment decisions for the prevention of heart attack and stroke". Presenter: Lauren N. Steimle. Co-Authors: Weiyu Li, Jeremy Sussman, Rod Hayward, & Brian Denton. INFORMS Healthcare, Rotterdam, Netherlands. July 2017.

[3] "Robust Dynamic Programming Under Contextual Uncertainty About Model Parameters". Presenter: Lauren N. Steimle. Co-authors: Brian Denton & David Kaufman. INFORMS Computing Society Conference, Austin, TX. January 2017.

[2] "Robust dynamic programming for medical decision making". Presenter: Lauren N. Steimle. Co-authors: Brian Denton & David Kaufman. INFORMS Annual Meeting, Nashville, TN. November 2016.

[1] "Robustness of Markov decision processes for medical treatment decisions". Presenter: Lauren N. Steimle. Co-authors: Brian Denton. INFORMS Annual Meeting, Philadelphia, PA. November 2015.

D.3. Invited Seminar Presentations

[7] Designing Academic Operations for the Return to Georgia Tech during the COVID-19 Pandemic. MIT Sloan Business School, Operations Management Seminar. November 13, 2023.

[6] Multi-Criteria Optimization to Inform Colleges' Academic Operations Response to COVID-19. Northwestern University, Center for Engineering and Health. June 12, 2023.

[5] Multi-Criteria Optimization to Inform Colleges' Academic Operations Response to COVID-19. INFORMS Junior Faculty Interest Group Early-Career Researchers Webinar Series. December 16, 2022.

[4] Sequential decision-making under ambiguity with applications to chronic disease management, Graduate Seminar Series, School of Industrial and Systems Engineering, University of Oklahoma, November 11, 2020.

[3] Sequential decision-making under ambiguity with applications to chronic disease management, Department of Industrial and Systems Engineering, Virginia Tech, December 2018.

[2] Sequential decision-making under ambiguity with applications to chronic disease management, Department of Industrial and Systems Engineering, University of Minnesota, December 2018.

[1] Sequential decision-making under ambiguity with applications to chronic disease management, H. Milton School of Industrial and Systems Engineering, Georgia Tech, December 2018.

D.4. Other Presentations

[3] "Modeling the Spread of Circulating Vaccine-Derived Poliovirus Type 2 Outbreaks".
Invited presentation to: The Global Polio Eradication Initiative's Subgroup for Modeling & Analytics
Date: August 3rd, 2023.
Topic: Discussed an overview of modeling efforts to inform outbreak response to vaccine-derived poliovirus outbreaks

[2] "Analytics for college campus operations during the COVID-19 pandemic"
Presented to: The ISyE Advisory Board
Date: April 22nd, 2021

[1] "Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk".
Presented to: Georgia Department of Public Health & Georgia Department of Education

- Garry McGiboney, Deputy Superintendent of Policy at Georgia Department of Education
- Laura Edison, Georgia Department of Public Health
- Arianna Weldone, Director, Get Georgia Reading Campaign
- Susan Miller, Georgia Geospatial Information Office

Date: June 16, 2020
Summary: Presented research related to reopening schools during the COVID-19 pandemic.

E. Grants and Contracts

E.1. As Principal Investigator

3. Designing a Data-driven and Risk-specific Approach to Maternal Care

Agency/Company:	Imagine, Innovate, and Impact (I^3) Emory School of Medicine/Georgia Tech Research Awards
Total Dollar Amount:	$100,000
Role:	PI
Collaborators:	Gian-Gabriel Garcia (Georgia Tech PI), Sheree Boulet (Emory PI) Marissa Platner (Emory co-PI)
Share:	$35,000 (35%)
Period of Contract:	1/1/2022-12/31/2022

2. Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

Agency/Company:	Georgia Tech ISYE Thos and Clair Muller Research Endowment Fund
Total Dollar Amount:	$10,000
Share:	$10,000 (100%)
Role:	PI
Period of Contract:	7/1/2020-6/31/2021

1. Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk
   Agency/Company: Georgia Tech, EVPR COVID-19 Rapid Response Seed Grant Program
   Total Dollar Amount: $9,000
   Role: PI
   Period of Contract: 7/1/2020-6/31/2021
   Share: $9,000 (100%)

E.2. As Co-Principal Investigator

2. Informing Global Polio Eradication Efforts Through Innovative Modeling Approaches
   Agency/Company: Centers for Disease Control and Prevention
   Role: co-PI
   Collaborators: Pinar Keskinocak (PI), Walter Orenstein (Emory co-PI)
   Amount: $875,000
   Share: $393,000 ($\sim$45%)
   Period of Contract: 09/2022–09/2027

1. From Data to Action: Optimizing Hospitals' Community Investments to Improve Social Determinants of Health
   Agency/Company: GT Building Teams and Moving Teams Forward Seed Grant
   Total Dollar Amount: $89,055
   Role: Co-PI
   Collaborators: Arthi Rao (PI)
   Share: $45,000 (50%)
   Period of Contract: 8/1/2021-6/31/2022

F. Other Professional Activities

- Georgia Clinical & Translational Science Alliance TEAMS (Translational Education and Mentoring in Science) Fellow, 2022-2023
- Invited "Core Participant" for the NSF Predicting emergence of Virulent Entities by Novel Technologies (PREVENT) Symposium, February 21-22, 2021

III. Education

A. Courses Taught

Sem., Year	Course Number	Course Title	Course Size	Eval.*
FL23	ISyE 3232	Stochastic Manufacturing and Service Systems	60	–
FL23	ISyE 3232	Stochastic Manufacturing and Service Systems	75	–
SP23	ISyE 3232	Stochastic Manufacturing and Service Systems	57	4.90
FL22	ISyE 6664	Stochastic Optimization	32	4.88
SP22	ISyE 3232	Stochastic Manufacturing and Service Systems	81	4.91
SP22	ISyE 3232	Stochastic Manufacturing and Service Systems	63	4.88
FL20	ISyE 3232	Stochastic Manufacturing and Service Systems	46	4.87
FL20	ISyE 3232	Stochastic Manufacturing and Service Systems	68	4.88

Sem., Year	Course Number	Course Title	Course Size	Eval.*
SP20	ISyE 8803	Methods for Decision-making in Health and Medicine	8	–
FL17	IOE 202**	Operations Modeling	138	3.60

* For courses taught at Georgia Tech, the eval is based on the interpolated median for the survey item: "Considering everything, the instructor was an effective teacher". For courses taught at the University of Michigan, the overall score reflects the median for the survey item: "Overall, the instructor was an effective teacher".
** Course taught at the University of Michigan as the instructor of record.

B. Individual Student Guidance

† Awards recognizing research that I advised.
‡ Awards/positions for which I nominated the student or wrote a letter of support.

B.1. Ph.D. Students

- **In Process**

5. Amaya McNealey
   Co-Advisor: Gian-Gabriel Garcia
   Degree Program: Industrial Engineering
   Advising Start Date: Fall 2022
   Honors and Awards:
   - George Family Foundation Fellowship, 2023‡
4. Abel Sapirstein
   Degree Program: Operations Research
   Advising Start Date: Fall 2021
   Honors and Awards:
   - George Family Foundation Fellowship, 2023‡
   - National Defense Science and Engineering Graduate (NDSEG) Fellowship, 2023†‡
   - National Science Foundation Graduate Research Fellowship, (Declined Award)†‡
   - Watson Fellowship, 2022-2023
3. Yuming Sun
   Co-Advisor: Pinar Keskinocak
   Degree Program: Operations Research
   Advising Start Date: Spring 2021
   Milestones: Comprehensive Examination, Fall 2022
   Honors and Awards:
   - George Family Foundation Fellowship‡
2. Jingyu Li
   Degree Program: Industrial Engineering
   Advising Start Date: Fall 2020
   Milestones: Comprehensive Examination, Fall 2022
   Honors and Awards:
   - Georgia HIMSS David Cowan Scholarship, 2023 ‡
   - Stewart Fellowship‡, Fall 20202025.†‡
   - George Family Foundation Fellowship, Spring 2022‡

1. Meghan Meredith
   Degree Program: Operations Research
   Advising Start Date: Fall 2020
   Milestones: Comprehensive Examination, Fall 2021
   Honors and Awards:
   - National Science Foundation Graduate Research Fellowship, 2022-2025.†‡
   - Minority Issues Forum Poster Competition, 1st Place †
     INFORMS Annual Meeting, 2022
   - Master Modeler Competition, 2nd Place, 2022
   - Georgia HIMSS David Cowan Scholarship, 2021 ‡
   - ISyE George Family Foundation Fellowship, 2021‡

   Additional Research/Industry Experiences:
   - RAND Summer Associate, 2023 ‡

- **Additional Ph.D. Students Advised on At Least One Project**

2. Zhouting Yu
   Advising period: 2020-2022
   Co-advisor(s): Pinar Keskinocak
   Paper: The impact of testing capacity and compliance with isolation on COVID-19.

1. Mohamed El Tonbari
   Advising Period: 2020-2022
   Co-advisor(s): Natashia Boland and Dima Nazzal
   Paper: Multi-criteria Course Mode Selection and Classroom Reassignment under Sudden Space Scarcity.

B.2. M.S. Students

- **Graduated**

1. Jiajia Xie
   Thesis: Modeling Covid-19 on campus using WiFi-based mobility data for policy evaluation and contact-tracing
   Co-advisor: B. Aditya Prakash
   Graduation: May 2021
   Position after advising : Ph.D. student,
   Civil and Environmental Engineering, Georgia Tech

- **Additional M.S. Students Advised on At Least One Project**

10. Hengyi Hu
    Graduation: December 2022
    Position after advising : Ph.D. student,
    Industrial Engineering, Northwestern University

9. Yogesh Avhad
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

8. Raneem Gashgari
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

7. Hanna Hamilton
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

6. Xinyi Li
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

5. Kaiwen Luo
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

4. Mehren Navabi-Shirazi
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

3. Yuming Sun
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

2. Shimeng Zhang
   Advising period: Summer 2020
   Project: Analytics for Return-to-Campus Decisions to Mitigate COVID-19 Risk

1. Weiyu Li
   Advising period: 2016-2017
   Note: Advised as a Graduate Student

B.3. Undergraduate Students

11. Emily Bell
    Georgia Tech, 2023

    - Georgia Tech President's Undergraduate Research Award[†‡], Spring 2023

10. Julia Francois
    Georgia Tech SURE Program, 2022

9. Ezra Klinect
   Georgia Tech ISyE SURF Program, 2022

8. Madeleine Pollack
   Georgia Tech, 2021-2023
   Position after advising: Ph.D. Student, MIT Operations Research Center[‡]

    - Georgia Tech Davidson Family Tau Beta Pi Senior Engineering Award, 2023[‡]
    - Adobe Research Women-in-Technology Scholarship Recipient, 2022, $10,000[‡]

- INFORMS Undergraduate Scholarship, INFORMS Annual Meeting, 2021‡
- Georgia Tech President's Undergraduate Research Travel Award, Fall 2022‡
- Society of Women Engineers National Conference "Rapid Fire" Competition, Finalist, 2022†
- Georgia Tech Undergraduate Research Symposium, College of Engineering Oral Competition, 2nd place, 2022†
- Georgia Tech President's Undergraduate Research Travel Award, Summer 2022‡
- Georgia Tech Annual Outstanding Undergraduate Research Award, ISyE, 2022†
- Georgia Tech President's Undergraduate Research Salary Award, Spring 2022†‡
- Society of Women Engineers Collegiate Poster Competition, Finalist, 2021 †
- Georgia Tech Undergraduate Research Symposium, College of Engineering Poster Competition, 3rd place, 2021†

7. Lauren Johnson
   Georgia Tech, 2020 (Co-advised with Dima Nazzal)
   Position after advising: Senior Associate, Data Analytics, Cancer Study Group

6. Katherine Wehrenberg
   Georgia Tech, 2020 (Co-Advised with Dima Nazzal)

   - Georgia Tech President's Undergraduate Research Award, Fall 2020 †‡

5. Vinayak S. Ahluwalia
   University of Michigan, 2018-2020, Advised as a Graduate Student
   Position after advising: Medical student, University of Pennsylvania

   - Computing Research Association (CRA) Outstanding Undergraduate Researcher Award, Honorable Mention, 2020 †
   - INFORMS Undergraduate Operations Research Prize, Honorable Mention, 2019†
   - INFORMS Minority Issues Forum Participant, INFORMS Annual Meeting, 2019†
   - Tau Beta Pi Travel Award, University of Michigan Undergraduate Research Symposium, 2019†
   - INFORMS Undergraduate Travel Award, INFORMS Annual Meeting, 2018

4. Charmee Kamdar
   University of Michigan, 2018-2020, Advised as a Graduate Student
   Position after advising: Intern, Facebook (starting summer 2020)

3. Harry Wang
   University of Michigan, 2019, Advised as a Graduate Student
   Position after advising: Graduate Student, Computer Science, University of Pennsylvania

2. Ryan Krueger
   University of Michigan, 2017, Advised as a Graduate Student
   Position after advising: Graduate Student Researcher, Harvard Medical School

1. Deanna Hadley
   University of Michigan, 2017, Advised as a Graduate Student
   Position after advising: Supply Chain Planning Intern, Microsoft

B.4. Service on Thesis or Dissertation Committees

B.4.a Internal

Student Name	School	Advisor	Committee	Date
Sun Ju Lee	ISyE	Gian-Gabriel Garcia	Proposal	2022
Buse Eylul Oruc Aglar	ISyE	Pinar Keskinocak, Mohit Singh	Thesis	2023
			Proposal	2022
Jade Xiao	ISyE	Turgay Ayer	Thesis	2023
			Proposal	2022
Yi Cheng	ISyE	Alexander Shapiro	Thesis	2022
Andrew El Habr	ISyE	Turgay Ayer	Thesis	2022
Jovan Julien	ISyE	Turgay Ayer	Thesis	2022
			Proposal	2020
Zhouting Yu	ISyE	Pinar Keskinocak	Thesis	2023
			Proposal	2022
Rui Peng Liu	ISyE	Alexander Shapiro	Thesis	2022
			Proposal	2020
Anna Kirkpatrick	ACO	Cassie Mitchell, Prasad Tetali	Thesis	2021

IV. Service

A. Professional Contributions

A.1. Society Officers, Activities, and Membership

- Leadership Roles:
  1. INFORMS Health Applications Society, Council Member, 2023-2024
  2. INFORMS Subdivisions Council, Student chapter representative , 2017-2018
  3. INFORMS Chapters/Fora Committee, Student chapter representative, 2019-2019
  4. Society of Women Engineers, University of Michigan, Outreach Co-Chair, 2015-2016
  5. INFORMS Student Chapter, University of Michigan
     - Past-President, 2018
     - President, 2017
     - Vice-President, 2016
     - Webmaster, 2015
- Award Committees:
  1. INFORMS Minority Issues Forum (MIF) Poster Competition Judge, INFORMS Annual Meeting, Anaheim, CA, October 2021
  2. INFORMS Minority Issues Forum (MIF) Poster Competition Judge, INFORMS Annual Meeting, Indianapolis, October 2022
- Membership:
  1. INFORMS: Institute for Operations Research and Management Science
  2. IISE: Institute for Industrial and Systems Engineers

A.2. Organization and Chairmanship of Technical Sessions, Workshops and Conferences

- Member of Organizing Committee for Conferences and Workshops:
  1. Cluster Chair, Committee's Choice Cluster - Pandemic Management, INFORMS Annual Meeting 2023

- Organizing Technical Sessions:
  1. INFORMS Healthcare Conference, 2023
  2. INFORMS Annual Meeting, 2022
  3. INFORMS Annual Meeting, 2018
- Session Chair
  1. INFORMS Healthcare Conference, 2023
  2. INFORMS Annual Meeting, 2022
  3. INFORMS International Meeting/ CORS, 2022
  4. INFORMS Computing Society Conference, 2017

A.3. Technical Journal or Conference Referee Activities

- Technical Journal Referee:
  1. Healthcare Management Science
  2. IISE Transactions
  3. INFORMS Journal on Computing
     - Meritorious Reviewer, 2021
  4. Management Science
  5. Manufacturing & Service Operations Management
  6. Operations Research
  7. Production and Operations Management
  8. Risk Analysis
  9. Service Science

A.4. Proposal Panels and Reviews

- NSF CMMI panel
- NSF CISE panel

A.5. Other Involvement

- Core Participant, National Symposium on Predicting Emergence of Virulent Entities by Novel Technologies (PREVENT), National Science Foundation Workshop, February 22-23, 2021

B. Public and Community Service

1. Commencement Speaker, Elgin Academy, Elgin, IL - 2023. Spoke about my journey from wanting to be a doctor to becoming a professor of industrial engineering who works alongside doctors and public health officials to design better healthcare delivery systems.
2. Presented to the “Engineering” class at Westlake High School, Fulton County, GA about industrial engineering and healthcare applications. October 2020
3. Engineering Club at Adams STEM Academy, Ypsilanti, MI in 2015. Organized and led a weekly after-school “engineering club” for fourth-grade students which involving activities demonstrating concepts from industrial, civil, and mechanical engineering

4. Program organizer, Michigan Engineering Road Show "Listening to Light" program, 2016. Organized and ran a day-long engineering program centered around optics engineering for high-schoolers in Detroit.

5. Females Excelling More in Math, Engineering, and the Sciences (FEMMES), University of Michigan

    - Volunteer, Elementary School Science Night, 2017
    - Activity Leader, Saturday Science Capstone, 2015-2016. Led an activity to introduce middle-school girls to industrial engineering and health systems engineering through an "Emergency Department Simulation Game" partnering with the INFORMS Student Chapter.
    - Volunteer, Community Outreach at Ypsilanti Public Library, 2016

C. Institute Contributions

C.1. College Committee Service and Activities

1. Advisor, INFORMS Student Chapter, 2020–present

    - Chapter recognition: *cum laude* (2020), *magna cum laude* (2021, 2022).
    - Judith Liebman Awardees: Andrew ElHabr, 2021[‡]

C.2. School Committee Service

1. Co-organizer of ISyE Seminar Series- 2021– 2022.

2. Operations Research (OR) Coordinating Committee 2021–present.

3. Graduate Student Admission Committee, 2020 – present

C.3. Program Development

1. ISyE Diversity, Equity, and Inclusion Fellow. Created an outreach program to HBCUs and womens colleges to attract more students from historically underrepresented groups to apply to ISyE graduate programs.