

Kayse Lee Maass

January 29, 2020

Dept. of Mechanical and Industrial Engineering
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EDUCATION

| | |
|---|---|
| Ph.D., Industrial and Operations Engineering University of Michigan, Ann Arbor, MI Thesis title: "Mitigating Hard Capacity Constraints in Facility Location Modeling" Advisor: Mark S. Daskin | <i>Graduated: April 2017</i> |
| M.S. Industrial and Operations Engineering University of Michigan, Ann Arbor, MI | <i>Graduated: May 2014</i> |
| B.A. Mathematics Bethel University, St. Paul, MN | <i>Graduated: May 2012, Summa Cum Laude</i> <i>Minor: Business</i> |
| B.A. Physics Bethel University, St. Paul, MN | <i>Graduated: May 2012, Summa Cum Laude</i> |

PROFESSIONAL EXPERIENCE

| | |
|---|---|
| Northeastern University , Boston, MA Position: Assistant Professor, Department of Mechanical & Industrial Engineering | <i>Aug. 2018 – Present</i> |
| Mayo Clinic , Rochester, MN Position: Postdoctoral Research Associate, Department of Health Sciences Research Research Trainee, Department of Health Sciences Research | <i>May 2017 – Aug. 2018</i> <i>Oct. 2016 – Apr. 2017</i> |
| LLamasoft Inc. , Ann Arbor, MI Position: Applied Research Intern | <i>May 2014 – Oct. 2014</i> |

RESEARCH INTERESTS

Methodological: Optimization (stochastic/deterministic), network theory

Application areas: Human trafficking, mental health, social justice, access to services, facility location modeling, supply chain

PUBLICATIONS (*Indicates student co-author)

ACCEPTED/PUBLISHED PEER REVIEWED JOURNAL ARTICLES

- Caulkins, J.P., Kammer-Kerwick, M., Konrad, R., Maass, K.L., Martin, L., and Sharkey, T. (2019) [A Call to the Engineering Community to Address Human Trafficking](#). *The Bridge*. Vol. 49. No. 3.
- Maass, K.L., Trapp, A., and Konrad, R. (2019) [Optimizing placement of residential shelters for human trafficking survivors](#). *Socio-Economic Planning Sciences*. In Press. DOI: 10.1016/j.seps.2019.100730
➤ *Mentioned in the United Nations Report of the Special Rapporteur on Contemporary Forms of Slavery*
- Tucker, E. L.*, Smith, A. R., Daskin, M. S., Schapiro, H.*, Cottrell, S.M.*, Gendron, E.*, Hill-Callahan, P., Gill, S.J., Leichtman, A. B., Merion, R. M. and Maass, K. L., (2019) [Life and Expectations Post-Kidney Transplant: A Qualitative Analysis of Patient Response](#). *BMC Nephrology*. Vol. 20, No. 175. DOI: 10.1186/s12882-019-1368-0
- Maass, K.L., Smith, A.R., Tucker, E.L.*, Schapiro, H.*, Cottrell, S.M.*, Gendron, E.*, Hill-Callahan, P., Gill, S.J., Daskin, M.S., Merion, R.M., Leichtman, A.B. (2019) [Comparison of patient and provider goals, expectations, and experiences following kidney transplantation](#). *Patient Education and Counseling*. Vol. 102, No. 5, pp. 990-997. DOI: 10.1016/j.pec.2018.12.010

5. Flowers, L.M., Maass, K.T., Melin, G.J., Campbell, R.L., Lohse, C.M., Novotny, P.J., Westphal, J.J., Nestler, D.M., Pasupathy, K.S. (2018) [Consequences of the 48-hour rule: A lens into the psychiatric patient flow through an emergency department](#). *American Journal of Emergency Medicine*. Vol. 36, No. 11, pp. 2029-2034. DOI: 10.1016/j.ajem.2018.03.016
6. Maass, K. L. and Daskin, M. S. (2017) [A cyclic allocation model for the inventory-modulated capacitated location problem](#). *Information Systems and Operational Research*, Vol. 55, No. 4, pp. 312 - 338. DOI: 10.1080/03155986.2017.1290425
➤ **Finalist in the INFORMS Section on Location Analysis Student Paper Competition**
7. Maass, K. L., Daskin, M.S., and Shen, S. (2016). [Mitigating hard capacity constraints with inventory in facility location modeling](#). *IIE Transactions*, Vol. 48, No. 2, pp. 120-133. DOI: 10.1080/0740817X.2015.1078015
8. Maass, K.L., Liu, B.*, Daskin, M.S., Duck, M., Wang, Z.*, Mwenesi, R.*, and Schapiro, H*. (2015). [Incorporating nurse absenteeism into staffing with demand uncertainty](#). *Health Care Management Science*, Vol. 20, No. 1, pp. 141-155. DOI: 10.1007/s10729-015-9345-z
9. Maass, K.L., Weiss, A.*, Lo, V.M.H.*, and Daskin, M.S. (2015). [Maximizing diversity in the Engineering Global Leadership Cultural Families](#). *Interfaces*, Vol. 45, No. 4, pp. 293-304. DOI: 10.1287/inte.2015.0796
➤ **Mentioned in the "Diversity and OR/MS/Analytics" ORMS Today Article (June 2019, Vol. 46, No. 3)**

ACCEPTED/PUBLISHED PEER REVIEWED CONFERENCE PROCEEDINGS

1. Romero-Brufau, S., Kostandy, P. M., Maass, K. L., Wutthisirisart, P., Sir, M., and Pasupathy, K., (2018) [Development of data integration and visualization tools for the Department of Radiology to display operational and strategic metrics](#). *American Medical Informatics Association, Proceedings of the 2018 American Medical Informatics Association Annual Symposium*. pp. 942-951.

CHAPTERS IN EDITED BOOKS

1. Daskin, M.S., and Maass, K.L. (2019). "[Location Analysis and Network Design](#)." Chapter 17, *Operations, Logistics and Supply Chain Management*, (H. Zijm, M. Klumpp, A. Regattieri, and S. Heragu editors), Springer. pp. 379-398. DOI: 10.1007/978-3-319-92447-2_17
2. Daskin, M.S., and Maass, K.L. (2015). "[The p-Median Problem](#)." Chapter 2, *Location Science*, (G. Laporte, S. Nickel, and F. Saldanha-da-Gama editors), Springer. pp. 21-45. DOI: 10.1007/978-3-319-13111-5_2

JOURNAL ARTICLES UNDER REVIEW

1. Maass, K.L., Halter, E.*, Huschka, T, Sir, M.Y., and Pasupathy, K.S. Using Discrete Event Simulation to Evaluate Radiology Process Changes Pre-Implementation. Submitted to *Journal of Medical Informatics*

WORKING PAPERS

1. Tezcan, B.*, and Maass, K.L. A Stochastic Network Interdiction Model for Human Trafficking Intervention. Working Paper. *Target Outlet: European Journal of Operational Research*
2. Bender, A.*, El Khalkhali, M.*, Dimas, G.*, Konrad, R., Trapp, A., and Maass, K.L. Estimating Effectiveness of Identifying Human Trafficking Victims: An Application of Data Envelopment Analysis on the Nepal / India Border. Working Paper. *Target Outlet: Journal of Applied Analytics*
3. Dimas, G.*, Konrad, R., Trapp, A., and Maass, K.L. Generating Sustainable Data in Anti- Human Trafficking Non-Governmental Organizations. Working Paper. *Target Outlet: Journal of Human Trafficking*
4. Maass, K. L., Daskin, M.S., and Shen, S. A joint chance-constrained Inventory Modulated Capacitated Facility Location Model. Working Paper.

5. Maass, K.L., Tucker, E.*, Daskin, M.S., McGonegal A., Feuerbacher, L., and Rider, K. Utilizing goal programming to schedule operating room staff in an over constrained model. Working Paper. *Target Outlet: IOSR Journal of Nursing and Health Science*
6. Maass, K.L., Sir, M.Y., and Pasupathy, K.S. A Mixed-Methods Queuing and Linear Programming approach to Balancing Multi-class Patient Appointments. Working Paper

OTHER

1. Konrad, R., Trapp, A., and Maass, K.L. (2017) [Human Trafficking Analysis](#). *ORMS Today*. Vol. 4, No. 2
2. Rotman, E.F, Stoklosa, H., Baldwin, S.B., Chisolm-Straker, M., Price, R.K., and Atkinson, H.G. on behalf of HEAL Trafficking [including Maass, K.L.] (2017) [Public Health Research Priorities to Address US Human Trafficking](#). *American Journal of Public Health*, Vol 17, No. 7, pp. 1045-1047. DOI: 10.2105/AJPH.2017.303858
3. Maass, K. (2017) [Mitigating Hard Capacity Constraints in Facility Location Modeling](#) (Doctoral Dissertation, University of Michigan). Available from ProQuest Dissertations & Theses Global database (Accession Order No. AAT 10612145)
4. Collar, N., Edwards, A., Jeke, J., Johnson, S., Lee, K., and Soergel, C. "[The Traveling Salesman at a Home Near You: Investigating the Traveling Salesman Problem with Varying Home Points](#)." *The Journal of the Summer Undergraduate Mathematical Science Research Institute*, 12 p. 38-63.

GRANTS

EXTERNAL

| | |
|---|------|
| National Science Foundation, (PI) \$574,126 | |
| "ISN2: Coordinated Interdiction for Disruption of Labor Trafficking in the Agricultural Sector" | 2019 |
| National Science Foundation, (co-PI) \$535,565 | |
| "ISN2: Disrupting Human Trafficking via Needs Matching and Capacity Expansion" | 2019 |
| National Institute of Justice, Travel Grant (PI) | 2019 |
| "Human Trafficking Disruption: From Data Insights to Decision Making" | |
| International Association of Crime Analysts Training Conference, Oxon Hill, MD | |
| Uncharted Software (PI) Data-Access Grant | 2019 |
| "Modeling Online Sex Trafficking Networks for Effective Interdiction: Operations and Organizational Features" | |
| National Science Foundation, EAGER (co-PI) \$166,098 | |
| "ISN: A Data Analytic Approach to Understanding Human Trafficking Networks" | 2018 |
| National Science Foundation, EAGER (co-PI) \$320,969 | |
| "ISN: Modeling Operations of Human Trafficking Networks for Effective Interdiction" | 2018 |
| National Science Foundation Graduate Research Fellowship Award, \$126,000 | 2013 |
| "Improving Operations Research by Developing Techniques for Incorporating Large Data Sets" | |

INTERNAL

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| Project-Based Exploration for the Advancement of Knowledge – Base Camp, Northeastern University, \$500 | |
| "Incorporating Societal Factors into Industrial Engineering Models" with undergraduate student Olivia Jonna | 2020 |
| "Human Trafficking Data Availability" with undergraduate student Leticia Reyes Gonzalez | 2019 |
| Mutual Mentoring Advancement Program, Northeastern University, (co-Lead) \$1,500 | 2018 |
| "Mutual Mentorship for Faculty in Analytics for Eliminating Mental Health Crisis and Improving Critical Healthcare System" | |
| Graduate Student Community Grant, University of Michigan, \$1,000 | 2014 |
| "Business in a Global World Workshop: Developing Cultural Awareness" | |
| Rackham Travel Grant, University of Michigan | |
| "Incorporating Chance Constraints into the Inventory Modulated Capacitated Facility Location Model with Stochastic Demand" | 2016 |
| Workshop on Location and Network Design-Transportation and Logistics, \$1,300 | |
| "Temporal allocation policies for an inventory modulated capacitated facility location problem" | 2014 |
| INFORMS Annual Meeting, \$800 | |
| "A new approach for integrating inventory into capacitated facility location modeling" | 2013 |
| INFORMS Annual Meeting, \$750 | |

"New Approach to Capacity Modeling in Location Models"
ISERC Conference, \$950

2013

CONTRIBUTOR

Minnesota Dept. of Human Services, \$5,000,000

2019

Regional Behavioral Health Crisis Program; Facilities Grants: (SF2161/HF2274)

Awarded to: Olmsted County in partnership with Mayo Clinic (K.L. Maass Operations Research Lead), Olmsted Medical Center and NAMI Southeast Minnesota

CONFERENCE AND SEMINAR PRESENTATIONS

Upcoming

"Modeling Operations of Human Trafficking Networks for Effective Interdiction"
Seminar Series, University of Michigan, Ann Arbor, MI

Mar. 2020

"Modeling Operations of Human Trafficking Networks for Effective Interdiction"
Production and Operations Management Society Annual Conference, Minneapolis, MN

Apr. 2020

"Optimizing placement of residential shelters for human trafficking survivors"
International Symposium on Locational Decisions, Hamburg, Germany

Jun. 2020

Past

"Modeling Operations of Human Trafficking Networks for Effective Interdiction"
Society for Risk Analysis, Arlington, VA

Dec. 2019

"From Insights to Action: How Industrial Engineering Can Aid Anti-Human Trafficking Efforts"
New York Capitol Region Anti-Trafficking Taskforce, Albany, NY

Dec. 2019

"Modeling Operations of Human Trafficking Networks for Effective Interdiction"
Lehigh University, Industrial and Systems Engineering, Bethlehem, PA

Nov. 2019

"From Insights to Action: How Industrial Engineering Can Aid Anti-Human Trafficking Efforts"
Lehigh University, Women, Gender, and Sexuality Studies, Bethlehem, PA

Nov. 2019

"Modeling Operations of Human Trafficking Networks for Effective Interdiction"
INFORMS Annual Meeting, Seattle, WA

Oct. 2019

"A Cyclic Allocation Model for the Inventory-Modulated Capacitated Location Problem"
INFORMS Annual Meeting, Seattle, WA

Oct. 2019

"Benefits and Challenges in Using Data Analytics and Mathematical Models to Aid Anti-Human Trafficking Efforts"
Human Trafficking and Social Justice Conference, University of Toledo, Toledo, OH

Sept. 2019

"Human Trafficking Disruption: From Data Insights to Decision Making"
International Association of Crime Analysts Training Conference, Oxon Hill, MD

Aug. 2019

➤ **Awarded NIJ Travel Grant and Invitation to Present in NIJ Research Track**

"Optimal Placement of Shelters for Human Trafficking Survivors: An Illustrative Example of Mathematical Models Serving as Decision Support Tools"

Jun. 2019

Global Conference on Human Trafficking and Trauma, Mississauga, ON, Canada

➤ **Distinguished Among the Best Research Abstracts**

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| <i>"A Broader Perspective: Integrating Societal Factors into Human Trafficking Shelter Location Models"</i> Production and Operations Management Society Annual Conference, Washington, D.C. | May 2019 |
| <i>"Industrial Engineering Models to Aid Anti-Human Trafficking Efforts"</i> Human Trafficking Response Strategies, Northeastern University, Boston, MA | Apr. 2019 |
| <i>"Opportunities for Industrial Engineering to Aid in Anti-Human Trafficking Efforts"</i> National Engineers Week Distinguished Seminar, Northeastern University, Boston, MA | Feb. 2019 |
| <i>"Opportunities for Supply Chain & Operations Researchers to Aid in Anti-Human Trafficking Efforts"</i> Supply Chain and Operations Strategy, Carlson School of Management, University of Minnesota, Minneapolis, MN | Nov. 2018 |
| <i>"A Broader Perspective: Integrating Societal Factors into Human Trafficking Shelter Location Models"</i> INFORMS Annual Meeting, Phoenix, AZ | Nov. 2018 |
| <i>"Can Data Analytics and Mathematical Models Aid Anti-Human Trafficking and Social Justice Efforts?"</i> Human Trafficking and Social Justice Conference, University of Toledo, Toledo, OH | Sept. 2018 |
| <i>"Opportunities for Supply Chain & Operations Researchers to Aid in Anti-Human Trafficking Efforts"</i> Supply Chain and Operations Strategy, Carlson School of Management, University of Minnesota, Minneapolis, MN | Apr. 2018 |
| <i>"Informing Decision Making with Operations Research: Locally, Regionally, and Nationally"</i> Health Sciences Research Grand Rounds, Mayo Clinic, Rochester, MN | Mar. 2018 |
| <i>"Selecting Locations of Rehabilitative Shelters for Human Trafficking Survivors among States in the U.S.: A Decision Analytic Approach"</i> INFORMS Annual Meeting, Houston, TX | Oct. 2017 |
| <i>"Using Simulation to Improve Radiology Appointment Schedules and Patient Service Levels"</i> INFORMS Annual Meeting, Houston, TX | Oct. 2017 |
| <i>"Using Chance Constraints to Allow for Short Term Processing Capacity Flexibility"</i> International Symposium on Locational Decisions, Rotman School of Management, Toronto, ON/Huntsville, ON | Jul. 2017 |
| <i>"Opportunities for Supply Chain & Operations Researchers to Aid in Anti-Human Trafficking Efforts"</i> Supply Chain and Operations Strategy, Carlson School of Management, University of Minnesota, Minneapolis, MN | Apr. 2017 |
| <i>"Comparison of Various Chance Constraints on the Inventory Modulated Capacitated Location Problem"</i> INFORMS Annual Meeting, Nashville, TN | Nov. 2016 |
| <i>"Incorporating chance constraints into the inventory modulated capacitated facility location model w/ stochastic demand"</i> LAND TRANSLOG III Workshop, Santa Cruz, Chile | Mar. 2016 |
| <i>"Stochastic inventory modulated capacitated facility location models"</i> INFORMS Annual Meeting, Philadelphia, PA | Nov. 2015 |
| <i>"A joint chance-constrained inventory modulated capacitated facility location model"</i> Workshop on Logistics and Supply Chain Management, Berkeley, CA | Oct. 2015 |
| <i>"Incorporating nurse absenteeism into long term staffing with demand uncertainty"</i> INFORMS Healthcare Conference, Nashville, TN | Jul. 2015 |
| <i>"A joint chance-constrained inventory modulated capacitated facility location model"</i> | Jun. 2015 |

Industrial and Systems Engineering Research Conference, Nashville, TN

“Optimal long term nurse staffing considering absenteeism and demand uncertainty” Jun. 2015
Industrial and Systems Engineering Research Conference, Nashville, TN

“Optimal long term nurse staffing considering absenteeism and demand uncertainty” Apr. 2015
Euro Mini Conference on Improving Healthcare: New challenges, New Approaches, Coimbra, Portugal

“Temporal allocation policies for an inventory modulated capacitated facility location problem” Nov. 2014
INFORMS Annual Meeting, San Francisco, CA

“MCubed: study of variability in kidney transplant and provider goals” Oct. 2014
MCubed Symposium, Univ. of Michigan, Ann Arbor, MI

“A new stochastic capacitated facility location modeling approach” Jun. 2014
Industrial and Systems Engineering Research Conference, Montreal, Canada

“Long term nurse staffing under demand uncertainty” Jun. 2014
Industrial and Systems Engineering Research Conference, Montreal, Canada

“Mitigating hard capacity constraints in stochastic facility location modeling” Jun. 2014
International Symposium on Locational Decisions, Naples/Capri, Italy

“A new stochastic capacitated facility location modeling approach” Jun. 2014
INFORMS Transportation Science and Logistics Society Workshop, Chicago, IL

“A new approach to integrating inventory into capacitated facility location modeling” Nov. 2013
North American Regional Science Council, Atlanta, GA

“Maximizing diversity in the Engineering Global Leadership Honors Program cultural families” Oct. 2013
INFORMS Annual Meeting, Minneapolis, MN

“A new approach for integrating inventory into capacitated facility location modeling” Oct. 2013
INFORMS Annual Meeting, Minneapolis, MN

“New approach to capacity modeling in location models” May 2013
Industrial and Systems Engineering Research Conference, San Juan, Puerto Rico

“Development of p-median facility location models” Jul. 2012
Summer Institute Research Symposium, Univ. of Michigan, Ann Arbor, MI

“Data quality management of black box monitored driving behaviors in a sleep apnea study” Jul. 2011
Summer Undergraduate Research Conference, Univ. of Iowa, Iowa City, IA

“The traveling salesman at a home near you: investigating the traveling salesman problem with varying home points” Jul. 2010
Summer Undergraduate Mathematics and Statistics Research Institute Conference, Miami Univ., Oxford, OH

ROUNDTABLES AND PANEL PRESENTATIONS

Upcoming

Humanitarian Operations and Crisis Management- Human Trafficking - Research Panel Apr. 2020
Production and Operations Management Society, Minneapolis, MN

Past

Roundtable: Combating Human Trafficking Dec. 2019
Society for Risk Analysis, Arlington, VA

Human Trafficking & ORMS: A Panel Discussion Oct. 2019
INFORMS Annual Meeting, Seattle, WA

Plenary Panel: A Dialogue on Human Trafficking Jun. 2019
Global Conference on Human Trafficking and Trauma, Mississauga, ON, Canada

POSTER PRESENTATIONS

"A Broader Perspective: Integrating Societal Factors into Human Trafficking Shelter Location Models" Mar. 2019
NSF Workshop: Future Directions in Service, Manufacturing, and Operations Research, SMU, Dallas, TX

"Mitigating hard capacity constraints in facility location modeling" Oct. 2015
Engineering Graduate Symposium, Univ. of Michigan, Ann Arbor, MI

"Using optimization techniques to improve the shift scheduling of operation room staff" Sept. 2015
Healthcare Engineering and Patient Safety Symposium, Univ. of Michigan, Ann Arbor, MI

"Optimizing nurse staffing with absenteeism" Sept. 2014
Healthcare Engineering and Patient Safety Symposium, Univ. of Michigan, Ann Arbor, MI

"Long term nurse staffing under demand uncertainty using unit, float, and temporary nurses" Nov. 2013
Healthcare Engineering and Patient Safety Symposium, Univ. of Michigan, Ann Arbor, MI

"The traveling salesman at a home near you: investigating the traveling salesman problem with varying home points" Jan. 2011
Joint Mathematics Meetings, New Orleans, LA

CO-AUTHORED PRESENTATIONS

^Indicates Presenting Author

***Indicates student advised**

Upcoming

"Mitigating Supply Chain Disruption: Designing Sustainable Networks using Stochastic Programming" Feb. 2020
Jafari, A.^*, Maass, K.L.
College of Engineering PhD Research Expo, Northeastern University, Boston, MA

"Interdicting Multi-Stage Stochastic Human Trafficking Networks with Varying Success Parameters" May 2020
Tezcan, B.^*, Maass, K.L.
IISE Annual Conference, New Orleans, LA

"A Two-Stage Stochastic Programming Model for Supply Chain Networks under Disruption" May 2020
Jafari, A. ^*, Peterson, M. *, Maass, K.L.
Transportation, Science & Logistics Annual Conference, Arlington, VA

Past

"Interdicting Reconfiguring Networks with Applications in Human Trafficking" Oct. 2019
Co-Author with Kosmas, D.^, Sharkey, T., Maass, K.L.
INFORMS Annual Meeting, Seattle, WA

"Human Trafficking Transit Monitoring in Nepal: A Data Analytics Case Study" Oct. 2019
Co-Author with Dimas, G.^*, Konrad, R., Maass, K.L., Trapp, A.
INFORMS Annual Meeting, Seattle, WA

"A Data Analytic Approach to Understanding Human Trafficking Networks" Mar. 2019
Co-Author with Konrad, R.^, Trapp, A., Dank, M., Blom, J., Dimas G.*, Longenback, S.*, Wang, Q.*, & Yin, B.*
NSF Grantees Meeting: EAGER Disrupting Illicit Supply Networks, George Mason University, Arlington, VA

- “Modeling Operations of Human Trafficking Networks for Effective Interdiction”* Mar. 2019
Co-Author with Martin, L.^, Melander, C., Sharkey, T., Samad, T., & Barrick, K.
NSF Grantees Meeting: EAGER Disrupting Illicit Supply Networks, George Mason University, Arlington, VA
- “Data-Driven Capacity Assessment of Nursing Bay Resources Shared Among Multiple Radiology Modalities”* Nov. 2018
Co-Author with Kostandy, P.^, Bai, M., Romero Brufau, S., Schultz, S., Sir, M., Pasupathy, K., Bartholmai, B.
Radiological Society of North America 2018 Scientific Assembly and Annual Meeting, Chicago, IL
- “Using Discrete-Event Simulation to Evaluate Radiology Process Changes Pre-Implementation”* Nov. 2018
Co-Author with Halter, L^*, Huschka, T., Sir, M., & Pasupathy, K.
INFORMS Annual Meeting, Phoenix, AZ
- **Award: Minority Issues Forum Student Poster Competition, Honorable Mention**
- “Using Optimization to Maximize Diversity in Engineering Discussion Groups at the University of Michigan”* Nov. 2016
Co-Author with Daskin, M.S^
INFORMS Annual Meeting, Nashville, TN
- “Patient-centered goals and expectations following kidney transplantation: Comparison of patients to providers”* Sept. 2016
Co-Author with Tucker, E.L.^, Daskin, M.S., Smith, A.R., Schapiro, H., Cottrell, S.M., Gendron, E., Li, M., Hill-Callahan, P., Gill, S.J., Merion, R.M., & Leichtman A.B.
Poster Presentation, Healthcare Engineering and Patient Safety Symposium, Univ. of Michigan, Ann Arbor, MI
- “Locating rehabilitative shelters for survivors of domestic human trafficking”* Aug. 2016
Co-Author with Konrad, R.^ & Trapp, A.
Poster Presentation, Health & Humanitarian Logistics Conference, Atlanta, GA
- “Designing a nurse scheduling model for implementation”* Jun. 2016
Co-Author with Daskin, M.S., Tucker, E.L.^, Cahnman, E., Rider, K., McGonegal, A., & Feuerbacher, L.
INFORMS International Conference, Waikoloa, Hawaii
- “Variability in kidney transplant recipient and provider goals”* Jun. 2016
Co-Author with Tucker, E.L.^, Daskin, M.S., Smith, A.R., Schapiro, H., Cottrell, S.M., Gendron, E., Li, M., Hill-Callahan, P., Gill, S.J., Merion, R.M., & Leichtman A.B.
INFORMS International Conference, Waikoloa, Hawaii
- “The importance of including infeasibility while scheduling operating room staff”* May 2016
Co-Author with Daskin, M.S., Tucker, E.L.^, Cahnman, E., Rider, K., McGonegal, A., & Feuerbacher, L.
Industrial and Systems Engineering Research Conference, Anaheim, CA
- “Using optimization to assist in surgical nurse scheduling”* Nov. 2015
Co-Author with Daskin, M.S., Tucker, E.L.^, Cahnman, E., Rider, K., McGonegal, A., & Feuerbacher, L.
Seminars in Healthcare Systems Engineering, Univ. of Michigan, Ann Arbor, MI
- “Mitigating hard capacity constraints in facility location models”* Oct. 2015
Co-Author with Daskin, M.S.^
Operations Research Colloquium, The Pennsylvania State Univ., University Park, PA
- “Mitigating capacity constraints in facility location models”* Oct. 2015
Co-Author with Daskin, M.S.^
Workshop on Supply Chain Analytics, Univ. of California, Berkeley, CA
- “Incorporating nurse absenteeism into long term staffing with demand uncertainty”* Mar. 2015
Co-Author with Daskin, M.S., Duck, M., Liu, B., Mwenesi, R., & Wang, Z.

Poster Presentation, 2015 Dean's Research Day, Univ. of Michigan, Ann Arbor, MI

"MCubed: study of variability in kidney transplant patient and caregiver expectations" Nov. 2013
Co-Author with Merion, R., Leichtman, A., Daskin, M.S., Hill-Callahan, P., Gill, S.J., & Taborn, M.
Poster Presentation, MCubed Symposium, Univ. of Michigan, Ann Arbor, MI

"Integrating inventory into a new approach to capacitated facility location modeling" Jun. 2013
Co-Author with Daskin, M.S.^ & Shen, S.
International Workshop on Locational Analysis and Related Problems, Torremolinos, Spain

"Analytics, big data, and operations research" Aug. 2012
Co-Author with Daskin, M.S.^
RWTH Aachen Univ., Aachen, Germany

TEACHING EXPERIENCE

PRIMARY INSTRUCTOR

IE 4520: Stochastic Modeling, Dept. of Mechanical and Industrial Engineering, Northeastern University, Boston, MA

Level: Undergraduate/Masters Frequency: Every semester, Fall 2018 – Spring 2020 Enrollment: 35-49

➤ Evaluation: 4.9/5

IOE 202: Operations Modeling, Dept. of Industrial and Operations Engineering, Univ. of Michigan, Ann Arbor, MI

Level: Undergraduate Frequency: Fall 2014 Enrollment: 140

Developed course materials; introduced students to inventory management, optimization, simulation, & queueing

➤ Evaluation: 4.25/5, *Joel and Lorraine Brown Graduate Student Instructor of the Year*

GUEST INSTRUCTOR

IOE 419: Service Operations Management, Dept. of Industrial and Operations Engineering, Univ. of Michigan, Ann Arbor, MI

Level: Undergraduate/Masters Frequency: Winter 2016 Enrollment: 60

Presented a guest lecture on nurse scheduling and infeasibility

IOE 541: Inventory Analysis and Control, Dept. of Industrial and Operations Engineering, Univ. of Michigan, Ann Arbor, MI

Level: Graduate Frequency: Fall 2015 Enrollment: 40

Presented a guest lecture on set covering facility location models

FORMAL ADVISING

PhD Dissertation Advisor

Northeastern University

- Arezoo Jafari, Jan. 2019 – Present
- Barış Tezan, Sept. 2019 – Present
- Nathan Adeyemi, Sept. 2019 – Present

PhD Oral Exam Committee

Northeastern University

- Razan Hassan, "Decision Making Under Uncertainty for a Wind & Storage Power Plant," Fall 2018
- Md Saiful Islam, "Achieving Covariate Balance in Observational Studies with Optimization Techniques," Fall 2019

Masters Thesis Advisor

Northeastern University

- Barış Tezan, "A Stochastic Network Interdiction Model for Human Trafficking Intervention," AY 2018/19

Masters Project Co-Advisor

Northeastern University

- Yidan Wang, "Simulation of Mental Health Patient Community Resource Utilization," Northeastern University, AY 2018/19

Graduate Research Assistants- External Universities*NSF EAGER: ISN: A Data Analytic Approach to Understanding Human Trafficking Networks*

- Geri Dimas, Worcester Polytechnic Institute, PhD Student—Data Science, Fall 2018 – Present
- Queting Wang, Worcester Polytechnic Institute, MS Student—Operations Analytics and Management, Spring 2019
- Samuel Longenbach, Worcester Polytechnic Institute, MS Student—Data Science, AY 2018/2019
- Biao Yin, Worcester Polytechnic Institute, PhD Student – Data Science, Fall 2018

Undergraduate ResearchNortheastern University

- Olivia Johnian, Industrial Engineering, Spring 2020
 “Incorporating Societal Factors into Industrial Engineering Models”
- Kelly Szaniawski, Health Science, Spring 2020
 “Violent Crime-Resource/Support Database”
- Maxim Petrovsky, Behavioral Neuroscience, Spring 2020
 “Improving Statewide Access to Inpatient Mental Health Beds”
- Jahan Silverman, Economics and Mathematics, Spring 2020
 “Correlation between H-2A Visa Denials and Wage/Labor Violations”
- Leticia Reyes Gonzalez, Industrial Engineering/Engineering Management, Fall 2019 – Spring 2020
 “Human Trafficking Data Availability”
- Rosemary Ajegwu, Industrial Engineering, Spring 2019 & 2020
 “Incorporating Joy into Shelter Optimization Models”
- Olanrewaju Abdul-Hakeem Oloritun, Industrial Engineering, Fall 2019
 “Mitigating Supply Chain Disruptions with Recovery Suppliers: Literature Review”
- Maxwell Peterson, Industrial Engineering, Fall 2019
 “Mitigating Supply Chain Disruptions with Recovery Suppliers: Literature Review”
- Alex Bender, Industrial Engineering, Summer 2019
 NSF EAGER: ISN: A Data Analytic Approach to Understanding Human Trafficking Networks
- Laura O'Donnell, Industrial Engineering Spring 2019
 “Improving Criminal Justice Diversion for Mental Health Patients”

External Universities

- Malak El Khalkhali, Worcester Polytechnic Institute, BS Student—Industrial Engineering, Fall 2019
 NSF EAGER: ISN: A Data Analytic Approach to Understanding Human Trafficking Networks
- Breanna Schad, Rutgers University, BS Student—Business Analytics and Information Technology, Summer 2019
 NSF EAGER: ISN: A Data Analytic Approach to Understanding Human Trafficking Networks
- Elizabeth Halter, Mayo Clinic, Summer 2018
 “Using Discrete-Event Simulation to Evaluate Radiology Process Changes Pre-Implementation”

ADDITIONAL RESEARCH EXPERIENCE**Department of Industrial and Operations Engineering**

Jun. 2012 – Apr. 2017

University of Michigan, Ann Arbor, MI

Position: Graduate Research Assistant

Feed My Starving Children Organization

Sept. 2011 – Dec. 2011

St. Paul, MN

Position: Operations Research Lead Project Manager, Bethel University

- Increased annual output by 2 million food packages which contributed to a 45% increase in efficiency
- Managed a team of 30 members to optimize the food packing assembly line processes

Summer Institute in Biostatistics

Jun. 2011– Jul. 2011

The University of Iowa, Iowa City, IA

Position: Research Intern

Summer Undergraduate Mathematical Sciences Research Institute
Miami University, Oxford, OH
Position: Research Intern

Jun. 2010 –Jul. 2010

HONORS/AWARDS

**Indicates student advised*

- Northeastern University’s Nominee for Johnson & Johnson WiSTEM2D – Math 2019
- Global Conference on Human Trafficking and Trauma, Best Research Abstract 2019
- Recognized as a ‘Rising Star’ among INFORMS’ Powerful, Pragmatic Pioneers 2019
- INFORMS Minority Issues Forum Student Poster Competition, Honorable Mention 2018
*Presented by Liz Halter**
- INFORMS New Faculty Colloquium Participant, Departmental Nomination 2018

GRADUATE HONORS/AWARDS

- INFORMS Section on Location Analysis Student Paper Competition, Finalist 2019
Maass, K. L. and Daskin, M. S. (2017) A cyclic allocation model for the inventory-modulated capacitated location problem. Information Systems and Operational Research, Vol. 55, No. 4, pp. 312 - 338. DOI: 10.1080/03155986.2017.1290425
- INFORMS Section on Location Analysis Dissertation Award, Runner-up 2018
- INFORMS Judith Liebman Award 2015
- Richard and Eleanor Towner Prize for Distinguished Academic Achievement (IOE Outstanding Graduate Student) 2015
- Richard and Eleanor Towner Prize for Outstanding Ph.D. Research 2015
- Joel and Lorraine Brown Graduate Student Instructor of the Year 2015
- World Medical Relief Student Partnership Award 2015
Graduate advisor for the undergraduate M-Heal organization
- INFORMS Doctoral Student Colloquium Participant, Departmental Nomination 2014
- Rackham Merit Fellowship 2012
Awarded for potential for scholarly success and to contribute to wider academic, professional, or civic communities

MEDIA/PRESS RELATED

PODCASTS

- [Resoundingly Human: November 2018 Part 1](#), [Podcast hosted by Ashley Kilgore] Topic: Human Trafficking and Operations Research, (Nov. 2018) DOI: 10.1287/orms.2018.11.01

REPORTS

- [Current and Emerging Forms of Slavery: Report of the Special Rapporteur on Contemporary Forms of Slavery, Including its Causes and Consequences](#), Urmila Bhoola for *United Nations Human Rights Office of the High Commissioner* (Jul. 25, 2019)

FEATURED MEDIA MENTIONS

- [‘How Do We Break the Supply Chain?’](#) Ian Thomsen for *News@Northeastern* (Nov. 18, 2019)
- [NSF Funds WPI-led Research Team to Help New York City Homeless Youths at Risk for Human Trafficking](#), Lisa Eckelbecker for *Worcester Polytechnic Institute* (Nov. 7, 2019)
- [Using Engineer-Developed Models to Disrupt Human Trafficking](#), Torie Wells for *Rensselaer Polytechnic Institute News* (Sept. 25, 2019)
- [Part 3: The Ideas—Changing Tack in the Battle Against Human Trafficking](#), Joel Wittnebel for *The Pointer* (July 5, 2019)
- [In the Fight Against Human Trafficking, Industrial Engineers Can Help](#), Laura Castañón for *News@Northeastern* (Feb. 8, 2019)
- [Powerful, Pragmatic Pioneers](#), Kara Tucker for *ORMS Today* (Feb. 3, 2019)
- [Researchers to Analyze Sex Trafficking Networks](#), Nikki Pederson for *Minnesota Daily* (Oct. 31, 2018)
- [The National Science Foundation Funds Research at WPI Aimed at Disrupting Trafficking Networks](#), Alison Duffy for *Worcester Polytechnic Institute* (Oct. 2, 2018)

- [Renata Konrad Using Industrial Engineering, Mathematics to Combat Human Trafficking](#), Ellen Ishkanian for *Worcester Polytechnic Institute* (July 28, 2017)
- Konrad, R., Trapp, A., and [Maass, K.L.](#) (2017) [Human Trafficking Analysis](#). *ORMS Today*. Vol. 4, No. 2

ADDITIONAL MEDIA MENTIONS

- Journal Article [“Maximizing diversity in the Engineering Global Leadership Cultural Families”](#) (Maass et al. 2015) mentioned in [“Diversity and OR/MS/Analytics”](#) Michael P. Johnson and Anahita Khojandi for *ORMS Today*, Jun. 2019, Vol. 46, No. 3
- [World Full of Problems, O.R.-Driven Solutions](#) Peter Horner for *ORMS Today*, Apr. 2017, Vol. 44, No. 2

SELECTED SERVICE/OUTREACH ACTIVITIES

INSTITUTIONAL

NORTHEASTERN UNIVERSITY

- Undergraduate Advisor for Career Opportunities, MIE Department 2020
- Undergraduate Advisor for Operations Research, MIE Department 2020
- Research Advancement Departmental Committee 2019-2020
- Communication Departmental Committee 2019-2020
- RISE ‘Solution Award’ Poster Judge 2019
- College of Engineering Undergraduate Research Fair, Presenter/Recruiter 2018-2019
- IE Open House, Presenter 2018
- IISE Student Chapter Faculty Research Night, Presenter 2018
- INFORMS Student Chapter IE Faculty Meet and Greet 2018

UNIVERSITY OF MICHIGAN

- NSF GRFP Application Reviewer 2013-2017
- SYNC Blue (Strengthen Your eEngineering Connection) alumni mentoring 2016
- Face2Face Engineering Mentoring 2016
- Univ. of Michigan INFORMS Student Chapter
 - Past-President* 2016
 - President* 2015
 - Vice President* Oct. 2013-2014
- “Thriving and Surviving in a PhD Program” Panel Member 2015
- Initiated and Developed the PhD Mentoring Program 2015
- Lunch and Lab with a Grad Student 2015
- Graduate Student Coordinator 2014-2016
- Graduate Student Advisory Committee Member 2014-2016
- Masters Mentoring Program 2014
- NSF GRFP Application Preparation Panel Member 2013-2014
- Recruiter for the “Recruit at Home” Program 2013-2014
- Michigan Mentorships 2013
- IOE Tech Day Presenter 2013

TO THE PROFESSION

- Journal Referee
Computers & Operations Research, European Journal of Operational Research, IIE Transactions, IIE Transactions on Healthcare, INFOR: Information Systems and Operational Research, International Journal of Production Research, Journal of the Operational Research Society, Omega, Operations Research Letters, Optimization Letters, Patient Education and Counseling, PLOS ONE, Production and Operations Management, Service Science, Socio-Economic Planning Sciences, Soft Computing, Transportation Science

- Panel Reviewer, National Science Foundation 2019 - 2020
- INFORMS Subdivision Council 2020-2021
 - Committee on Subdivision Collaboration 2020
- INFORMS Section on Location Analysis
 - Secretary 2019-Present
 - Treasurer 2017-2019
- Conference Session Chair
 - POMS Annual Meetings 2019
 - INFORMS Annual Conference, Section on Location Analysis 2013-2019
 - INFORMS Annual Conference, Public Sector OR 2018-2019
 - ISERC Annual Conference, Facility Logistics Track 2015
- Judge, INFORMS Annual Meeting, Interactive Poster Session 2018
- Experienced GRFP Resource Person, NSF GRFP website 2013-Present

TO THE COMMUNITY

- ProBono Analytics: NYU Criminal Justice Innovation Lab & Marion County Mayors Office 2018- Present
- Southeast Minnesota Mental Health Crisis Center Planning Committee (Mayo Clinic Operations Research Lead) 2018
- Behavioral Health Policy Committee, Mayo Clinic 2018
- The Stem Squad, Guest Scientist Host, Twitter 2018
- Sexual Violence Victim/Survivor Advocate; Certified in Minnesota 2016- Present
- Breaking Free Mathematics & Life-Skills Tutor 2010-2012

PROFESSIONAL MEMBERSHIP

| | |
|--|---------------|
| Institute for Operations Research and Management Science (INFORMS) | 2012-Present |
| Manufacturing and Service Operations Management Society | 2014-Present |
| Health Applications Society | 2013-Present |
| Transportation Science and Logistics Society | 2012-Present |
| Service Science Section | 2015-Present |
| Location Analysis Section | 2013-Present |
| Women In ORMS Forum | 2014-Present |
| <i>University of Michigan Student Chapter</i> (with various officer roles) | 2013-2016 |
| Health, Education, Advocacy, Linkage (HEAL) Trafficking | 2015-Present |
| Research Committee Member | 2015- Present |
| Institute for Industrial Engineers (IIE) | 2013-2015 |
| Production and Operations Management Society (POMS) | 2019-Present |
| Society of Physics Students (SPS) | 2011-2012 |
| <i>Secretary, Bethel University</i> | 2011-2012 |
| Omicron Delta Kappa (ODK) | 2009-Present |
| <i>Officer, Bethel University</i> | 2011-2012 |
| Sigma Pi Sigma Physics Honor Society | 2011-Present |
| Sigma Zeta- National Science and Math Honor Society | 2009-Present |