

# Andrew C. Trapp

## CURRICULUM VITAE

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### EDUCATION

- ◇ **Ph.D., Industrial Engineering**, 2011  
University of Pittsburgh, Pittsburgh, Pennsylvania
- ◇ **M.S., Computer Science and Operations Research**, 2006  
Bowling Green State University, Bowling Green, Ohio
- ◇ **B.S., Applied Mathematics**, 2000  
Rochester Institute of Technology (RIT), Rochester, New York

### PROFESSIONAL POSITIONS HELD

- ◇ February 2017 – Present, *Associate Professor, with tenure*  
Operations and Industrial Engineering  
Mathematical Sciences (Collaborative Appointment)  
Data Science (Collaborative Appointment)  
Worcester Polytechnic Institute
- ◇ July 2011 – February 2017, *Assistant Professor*  
Operations and Industrial Engineering  
Mathematical Sciences (Collaborative Appointment)  
Data Science (Collaborative Appointment)  
Worcester Polytechnic Institute

### PUBLICATIONS

#### Refereed Journal Articles

1. N. Ahani, P. Gözl, A. Procaccia, A. Teytelboym, A. C. Trapp, "Dynamic Placement in Refugee Resettlement," *accepted, Operations Research*, 2023.
2. N. Ahani, P. Gözl, A. Procaccia, A. Teytelboym, A. C. Trapp, "Dynamic Placement in Refugee Resettlement," *accepted, Research Highlights, Communications of the ACM*, 2023.
3. I. Ahanor, H. Medal, A. C. Trapp, "Computing Diverse Sets of Near-Optimal Solutions to Mixed-Integer Optimization Problems," *accepted, INFORMS Journal on Computing*, 2023.
4. R. A. Konrad, K. L. Maass, G. L. Dimas, A. C. Trapp, "Perspectives on How to Conduct Responsible Anti-Human Trafficking Research in Operations and Analytics," *European Journal of Operational Research*, 309(1), pp. 319-329, 2023.
5. P. Wiratchotisan, A. C. Trapp, "A Reformulation Technique to Linearize A Class of Polynomial Functions of Bounded Integer Variables," *accepted, Optimization Letters*, 2023.
6. S. Azizi, Ö. Aygül, A. C. Trapp, R. Konrad, S. Johnson, B. Faber, "Select, Route and Schedule: Optimizing Community Paramedicine Service Delivery with Mandatory Visits and Patient Prioritization," *accepted, Healthcare Management Science*, 2023.

7. G. L. Dimas, M. El Khalkhali, A. Bender, J. Blom, R. Konrad, K. L. Maass, A. C. Trapp, J. Zhu, "Estimating Effectiveness of Identifying Human Trafficking Victims: An Application of Data Envelopment Analysis on the Nepal-India Border," *accepted, INFORMS Journal on Applied Analytics*, 2022.
8. G. L. Dimas, R. A. Konrad, K. L. Maass, A. C. Trapp, "Operations Research and Analytics to Combat Human Trafficking: A Systematic Review of Academic Literature," *PLOS One*, 17(8), e0273708, 2022.
9. P. Wiratchotisatian, H. Atef Yekta, A. C. Trapp, "Stability Representations of Many-to-One Matching Problems: An Integer Optimization Approach," *INFORMS Journal on Computing*, 34(6), pp. 3325-3343, 2022.
10. Y. Kaya, K. Maass, G. Dimas, R. Konrad, A. C. Trapp, M. Dank "Improving Access to Housing and Supportive Services for Runaway and Homeless Youth: Reducing Vulnerability to Human Trafficking in New York City," *IIE Transactions*, pp. 1-15, 2022.
11. S. Azizi, C. Bozkir, A. C. Trapp, E. Kundakcioglu, A. K. Kurbanzade, "Aid Allocation for Camp-Based and Urban Refugees with Uncertain Demand and Replenishments," *Production and Operations Management*, 30(12), pp. 4455-4474, 2021.
12. N. Ahani, T. Andersson, A. Martinello, A. Teytelboym, A. C. Trapp, "Placement Optimization in Refugee Resettlement," *Operations Research*, 69(5), pp. 1349-1650, 2021.
13. A. C. Trapp, I. Harris, V. Sanchez Rodrigues, J. Sarkis, "Maritime Container Shipping from a Fourth-Party Logistics Perspective: Does Coopetition Improve Cost and Environmental Efficiencies?," *Transportation Research, Part D*, 87, pp. 102507, 2020.
14. W. Liu, A. C. Trapp, S. Djasmasbi, "Outlier-Aware, Density-Based Gaze Fixation Identification," *Omega*, 102, pp. 102298, 2020.
15. K. Maass, A. C. Trapp, R. A. Konrad, "Optimizing Placement of Residential Shelters for Human Trafficking Survivors," *Socio-Economic Planning Sciences*, 70, pp. 100730, 2020.
16. A. C. Trapp, R. A. Konrad, J. Sarkis, A. Z. Zeng, "Closing the Loop: Forging High-Quality Agile Virtual Enterprises in a Reverse Supply Chain via Solution Portfolios," *Journal of the Operational Research Society*, pp. 1-15, 2020.
17. A. C. Trapp, W. Liu, S. Djasmasbi, "Identifying Fixations in Gaze Data via Inner-Density and Optimization," *INFORMS Journal on Computing*, 31(3), pp. 459-476, 2019.
18. T. Petit, A. C. Trapp, "Enriching Solutions to Combinatorial Problems via Solution Engineering," *INFORMS Journal on Computing*, 31(3), pp. 429-444, 2019.
19. M. Shojaeizadeh, S. Djasmasbi, R. C. Paffenroth, A. C. Trapp, "Detecting Task Demand via an Eye Tracking Machine Learning System," *Decision Support Systems*, 116, pp. 91-101, 2019.
20. B. Lyu, Y. Li, J. Fu, A. C. Trapp, H. Xie, Y. Liao, "Scalable User-Substation Assignment with Big Data from Power Grids," *IEEE Transactions on Big Data*, 5(2), pp. 209-222, 2019.
21. A. C. Trapp, C. Li, P. Flaherty, "Recovering All Generalized Order-Preserving Submatrices: New Exact Formulations and Algorithms," *Annals of Operations Research*, 263 (1-2), pp. 385-404, 2018.
22. R. A. Konrad, A. C. Trapp, T. Palmbach, J. S. Blom, "Overcoming Human Trafficking via Operations Research and Analytics: Opportunities for Methods, Models, and Applications," *European Journal of Operational Research*, 259 (2), pp. 733-745, 2017.
23. A. C. Trapp, J. Sarkis, "Identifying Robust Portfolios of Suppliers: A Sustainable Selection and Development Perspective," *Journal of Cleaner Production*, 112 (3), pp. 2088-2100, 2016.
24. B. Tulu, A. C. Trapp, M. Hoque, D. M. Strong, S. A. Johnson, L. Garber, J. Trudel, "An Analysis of Patient Portal Utilization: What Can We Learn about Online Patient Behavior by Examining Portal Click Data?," *Health Systems*, 5 (1), pp. 66-79, 2016.

25. B. D. Faber, R. A. Konrad, C. Tang, A. C. Trapp, "Examining the Impact of Regular Physician Visits on Heart Failure Patients: A Use Case with Electronic Health Data," *Health Systems*, 5 (2), pp. 132-139, 2016.
26. A. C. Trapp, R. A. Konrad, "Finding Diverse Optima and Near-Optima to Binary Integer Programs," *IIE Transactions*, 47 (11), pp. 1300-1312, 2015.
27. A. C. Trapp, O. A. Prokopyev, "A Note on Constraint Aggregation and Value Functions for Two-Stage Stochastic Integer Programs," *Discrete Optimization*, 15, pp. 37-45, 2015.
28. A. C. Trapp, A. S. Rangwala, "Analyzing the Impact of In-rack Sprinklers in a Warehouse Fire: A Demonstration of the Role Optimization Has in Mitigating Damage," *Fire Safety Journal*, 73, pp. 55-62, 2015.
29. B. Shiner, C. Tang, A. C. Trapp, R. Konrad, I. Bar-On, B. V. Watts, "The Provision of Mental Health Treatment after Screening: Exploring the Relationship between Treatment Setting and Treatment Intensity," *General Hospital Psychiatry*, 36 (6), pp. 581-588, 2014.
30. A. C. Trapp, O. A. Prokopyev, A. J. Schaefer, "On A Level-Set Characterization of the Value Function of an Integer Program and Its Application to Stochastic Programming," *Operations Research*, 61 (2), pp. 498-511, 2013.
31. A. C. Trapp, F. Zink, O. A. Prokopyev, L. Schaefer, "Thermoacoustic Heat Engine Modeling and Optimization," *Applied Thermal Engineering*, 31 (14-15), pp. 2518-2528, 2011.
32. A. C. Trapp, O. A. Prokopyev, "Solving the Order-Preserving Submatrix Problem via Integer Programming," *INFORMS Journal on Computing*, 22 (3), pp. 387-400, 2010.
33. N. Temiz, A. Trapp, O. Prokopyev, C. J. Camacho, "Optimization of Minimum Set of Protein-DNA Interactions: a Quasi Exact Solution with Minimum Over-fitting," *Bioinformatics*, 26 (3), pp. 319-325, 2010.
34. A. Trapp, O. A. Prokopyev, S. Busygin, "Finding Checkerboard Patterns via Fractional 0-1 Programming," *Journal of Combinatorial Optimization*, 20 (1), pp. 1-26, 2010.
35. O. A. Prokopyev, S. Butenko, A. Trapp, "Checking Solvability of Systems of Interval Linear Equations and Inequalities via Mixed Integer Programming," *European Journal of Operational Research*, 199 (1), pp. 117-121, 2009.

#### Refereed Book Chapters

1. F. Farajzadeh, A. C. Trapp, "Optimization for Secure and Humane Border Operations," Chapter for Edited Volume *Encyclopedia of Optimization*, 3<sup>rd</sup> edition, Springer, 2022.
2. F. Zhang, C. Wang, A. C. Trapp, P. Flaherty, "A Global Optimization Algorithm for Sparse Mixed Membership Matrix Factorization," *New Advances in Statistics and Data Science*, Zhang, L. et al. editors, ICSA Book Series in Statistics, Springer, pp. 129-156, 2019.

#### Refereed Conference Publications

1. W. Huang, E. Deshusses, J. Pazour, Y. Telliel, A. C. Trapp, "Empowering Collective Impact: Introducing the SWAP System for Resource Sharing," *accepted, invited for oral presentation, EAAMO 2023*.
2. F. Farajzadeh, R. Killea, A. Teytelboym, A. C. Trapp, "Optimizing Sponsored Humanitarian Parole," *conditionally accepted, invited for poster presentation, EAAMO 2023*.
3. Y. Kaya, S. Mantell, K. Maass, R. Konrad, A. C. Trapp, G. Dimas, M. Dank, "Discrete Event Simulation to Evaluate Shelter Capacity Expansion Options for LGBTQ+ Homeless Youth," *2022 Winter Simulation Conference*, Singapore, December 2022.
4. G. Dimas, A. Ferrarotti, R. Konrad, and A. C. Trapp, "Streamlining The United States Immigration Court System: Using Simulation and Data Science to Effectively Deploy Capacity," *2021 Winter Simulation Conference*, Phoenix, Arizona, December 2021.
5. N. Ahani, P. Gözl, A. Procaccia, A. Teytelboym, A. C. Trapp, "Dynamic Placement in Refugee Resettlement," *2021 ACM conference on Economics and Computation*, Budapest, Hungary (virtual), July 2021.

6. P. Flaherty, P. Wiratchotisation, A. C. Trapp, "Globally Optimal Model-Based Clustering via Mixed Integer Nonlinear Programming," *Sets & Partitions: NeurIPS 2019 Workshop*, Vancouver, BC, Canada, December 2019.
7. A. C. Trapp, A. Teytelboym, N. Ahani, T. Andersson, "Refugee Resettlement via Machine Learning and Integer Optimization," *OR60 Annual Conference*, Lancaster, United Kingdom, September 2018.
8. W. Liu, S. Djasmasbi, A. C. Trapp, M. Shojaeizadeh, "Measuring Focused Attention Using Fixation Inner Density," *Human-Computer Interaction International Conference 2018 (HCII2018)*, Las Vegas, Nevada, July 2018.
9. C. Chagnon, A. C. Trapp, S. Djasmasbi, "Creating a Decision Support System for Service Classification and Assignment through Optimization," *Americas' Conference on Information Systems (AMCIS)*, Boston, MA, August 2017.
10. H. Saddiki, A. C. Trapp, P. Flaherty, "A Deterministic Global Optimization Method for Variational Inference," *Advances in Approximate Bayesian Inference: NIPS 2016 Workshop*, Barcelona, Spain, December 2016.
11. B. Lyu, S. Li, Y. Li, J. Fu, A. C. Trapp, H. Xie, and Y. Liao, "Scalable User Assignment in Power Grids: A Data Driven Approach," *ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, San Francisco, CA, October 2016.
12. M. Shojaeizadeh, S. Djasmasbi, A. C. Trapp, "Density of Gaze Points within a Fixation and Information Processing Behavior," *Human-Computer Interaction International Conference 2016 (HCII2016)*, Toronto, Ontario, Canada, July 2016.
13. M. Shojaeizadeh, S. Djasmasbi, A. C. Trapp, "Does Pupillary Data Differ During Fixations and Saccades? Does It Carry Information about Task Demand?," *Thirteenth Annual Workshop on HCI Research in MIS*, Fort Worth, TX, December 2015.
14. T. Petit, A. C. Trapp, "Finding Diverse Solutions of High Quality to Constraint Optimization Problems," *International Joint Conference on Artificial Intelligence (IJCAI)*, Buenos Aires, Argentina, July 2015. [Invited Oral (Long Talk) and Poster Presentation].

#### **Non-Refereed Articles / Book Reviews**

1. [Book Review] A. C. Trapp, J. Sarkis, "Decision Science for Housing and Community Development: Localized and Evidence-Based Responses to Distressed Housing and Blighted Communities," *Interfaces*, 2017.

#### **CURRENT DOCTORAL STUDENTS**

- ◇ Weixiao Huang
- ◇ Fatemeh Farajzadeh
- ◇ Marcela Vasconcellos
- ◇ Sepideh Sedghi
- ◇ Özge Aygül

#### **FORMER DOCTORAL STUDENTS**

- ◇ Dr. Geri Dimas, current position: Assistant Professor, Bryant University
- ◇ Dr. Narges Ahani, current position: Vice President Operation Research Analyst III, Bank of America
- ◇ Dr. Shima Azizi, current position: Assistant Professor, St. John's University
- ◇ Dr. Pitchaya Wiratchotisation, current position: Assistant Professor, Khon Kaen University
- ◇ Dr. Wen Liu, current position: Optimization Engineer, Facebook / Meta

## MEDIA COVERAGE

- ◇ **CNN.** *Ellis Island History: Irish Teen Annie Moore Was the First Immigrant to Arrive.* 2023. <https://www.cnn.com/2023/03/17/us/irish-history-ellis-island-annie-moore-cec/index.html>
- ◇ **Press Release, Worcester Polytechnic Institute.** *NSF Awards WPI and RPI Research Team \$1.8M to Create Resource Sharing Platform for Nonprofits.* 2022. <https://www.wpi.edu/news/nsf-awards-wpi-and-rpi-research-team-18m-create-platform-help-nonprofits-find-resources-and>
- ◇ **CDO (Chief Data Officer) Magazine.** *List of Academic Data Leaders.* 2021. [https://www.cdomagazine.tech/cdo\\_magazine/topics/leadership/cdo-magazine-announces-its-2021-list-of-leading-academic-data-leaders/article\\_c2d71764-4468-11eb-9c4b-af371efc64f4.html](https://www.cdomagazine.tech/cdo_magazine/topics/leadership/cdo-magazine-announces-its-2021-list-of-leading-academic-data-leaders/article_c2d71764-4468-11eb-9c4b-af371efc64f4.html)
- ◇ **Forbes.** *Autonomous in Action.* 2020. <https://www.forbes.com/sites/oraclecloud/2020/01/16/autonomous-in-action-self-driving-cars-get-all-the-publicity-but-other-industries-are-already-getting-exceptional-value-from-ai-based-systems/#292789b76e94>
- ◇ **Market Design Blog (by Nobel Laureate Al Roth).** *Refugee Resettlement in the US, by HIAS, Using Matching Technology.* 2019. <http://marketdesigner.blogspot.com/2019/04/refugee-resettlement-in-us-by-hias.html>
- ◇ **NPR Boston WBUR 90.9.** *Tool to Recommend Improvements to US Asylum Process.* 2019. <http://users.wpi.edu/~atrapp/Tool.mp3>
- ◇ **WPI Magazine.** *A Conversation with WPI President Laurie Leshin.* 2019. <https://web.archive.org/web/20220904011136/https://www.wpi.edu/news/andrew-trapp-conversation-president>
- ◇ **The Atlantic.** *How Technology Could Revolutionize Refugee Resettlement.* 2019. <https://www.theatlantic.com/international/archive/2019/04/how-technology-could-revolutionize-refugee-resettlement/587383>
- ◇ **OR/MS Today.** *Refugee Resettlement via Analytics.* 2019. <https://pubsonline.informs.org/doi/10.1287/orms.2019.02.09/full>
- ◇ **Market Design Blog (by Nobel Laureate Al Roth).** *Resettling refugees thoughtfully, by Trapp, Teytelboym, Martinello, Andersson, and Ahani.* 2018. <http://marketdesigner.blogspot.com/2018/10/resettling-refugees-thoughtfully-by.html>
- ◇ **Financial Times.** *Just the Job: How AI Is Helping Build A Better Life for Refugees.* 2018. <https://www.ft.com/content/9332fffc-ec57-11e8-89c8-d36339d835c0>
- ◇ **OR/MS Today.** *Optimization Support Software Matches Up Refugees, Employment.* 2018. <https://pubsonline.informs.org/doi/10.1287/orms.2018.06.06/full>
- ◇ **Analytics Magazine.** *Using Machine Learning and Optimization to Improve Refugee Integration.* 2018. <https://web.archive.org/web/20201103054755/http://analytics-magazine.org/using-machine-learning-and-optimization-to-improve-refugee-integration>
- ◇ **WPI News & Events.** *Global Lab Welcomes Fellows in Residence.* 2018. <https://www.wpi.edu/news/global-lab-welcomes-fellows-residence>
- ◇ **Press Release, Worcester Polytechnic Institute.** *The National Science Foundation Funds Research at WPI Aimed at Disrupting Human Trafficking Networks.* 2018. <https://www.wpi.edu/news/national-science-foundation-funds-research-wpi-aimed-disrupting-human-trafficking-networks>
- ◇ **The Conversation.** *Data Science Can Help Us Fight Human Trafficking.* 2017. <https://theconversation.com/data-science-can-help-us-fight-human-trafficking-81647>
- ◇ **The Daily Herd: "News & Info for the WPI Campus".** *Refugee Equation.* 2016. <https://www.wpi.edu/news/refugee-equation>
- ◇ **OpenSolver.** *Cool OpenSolver Applications.* 2016. <https://opensolver.org/opensolver-application-reports>
- ◇ **Technology, Innovation, and Entrepreneurship (TIES).** *Using Math to Do Good.* WPI Business School newsletter. 2016.

## PRESENTATIONS

- ◇ Innovations in Migration: Advanced Analytics for Humane Migration Solutions, *Innovations in Immigration Analytics Conference, Worcester Polytechnic Institute, Worcester, MA, 2023.*
- ◇ RUTH: Algorithmic Preference-Based Matching of Refugees to Sponsors, *Presented by Fatemeh Farajzadeh, Marketplace Innovation Workshop, Virtual, 2023.*
- ◇ Risk-Averse Placement Optimization in Refugee Resettlement, *Gordon College, Danvers, MA, 2023.*
- ◇ Optimizing the Benefit-to-Cost Ratio for Public Sector Decision Making, *Presented by Forrest Miller, Joint Mathematics Meetings, Boston, Massachusetts, 2023.*
- ◇ Improving Access to Housing and Supportive Services for Runaway and Homeless Youth: Reducing Vulnerability to Human Trafficking in New York City, *Presented by Yaren Kaya, ACM Conference on Equity and Access in Algorithms, Mechanisms, and Optimization, Arlington, Virginia, 2022.*
- ◇ Risk-Averse Placement Optimization in Refugee Resettlement, *INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ A Time-space Network Approach for the Foster Care Visitation Scheduling Problem, *Presented by Shima Azizi, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Modeling the United States Immigration Court System: An Application of Simulation and Data Science, *Presented by Geri Dimas, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Proactive Staging Of Border Resources In A Secure And Humane Manner Via Stochastic Programming, *Presented by Fatemeh Farajzadeh, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Combinatorial Exchange for Resource Sharing Among Nonprofits, *Presented by Weixiao Huang, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Matching Refugees to Stable Employment Opportunities via Many-to-Many Optimization, *Presented by Marcela Vasconcellos, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Optimizing The Benefit-to-Cost Ratio For Effective Capacity Deployment For New York City's Homeless Youth Shelter System, *Presented by Forrest Miller, INFORMS Annual Meeting, Indianapolis, Indiana, 2022.*
- ◇ Risk-Averse Placement Optimization in Refugee Resettlement, *University of Southern California, Los Angeles, CA, 2022.*
- ◇ Risk-Averse Placement Optimization in Refugee Resettlement, *Pennsylvania State University, State College, PA, 2022.*
- ◇ Using Optimization to Tackle Two Open Questions Related to Egyptian Fractions, *Worcester Polytechnic Institute, Worcester, MA, 2022.*
- ◇ Immigration and Mobility: United States Southern Border, *Presented by Geri L. Dimas, WPI Arts & Sciences Week, 2021.*
- ◇ Refugee Camp System Aid Allocation with Uncertain Demand and Replenishment Cycles, *Presented by Shima Azizi, INFORMS Annual Meeting, Anaheim, CA, 2021.*
- ◇ Getting Started in Public Sector Operations Research, *INFORMS Annual Meeting, Anaheim, CA, 2021.*
- ◇ Analytics To Improve The United States Immigration System, *Presented by Geri L. Dimas, INFORMS Annual Meeting, Anaheim, CA, 2021.*
- ◇ Reducing Vulnerability To Human Trafficking By Improving Access To Housing And Support Services, *Presented by Yaren Kaya, INFORMS Annual Meeting, Anaheim, CA, 2021.*

- ◇ Improving Access to Homeless Shelter Services for Youth at Risk of Human Trafficking, *Poster Presented by Yaren Kaya, INFORMS Annual Meeting, Anaheim, CA, 2021.*
- ◇ Risk-Averse Placement Optimization In Refugee Resettlement, *Presented by Narges Ahani, INFORMS Annual Meeting, Anaheim, CA, 2021.*
- ◇ Integrating Vehicle Routing and Scheduling to Optimize Foster Care Visitations, *Presented by Caroline Johnston, Canadian Operational Research Society Annual Conference, 2021.*
- ◇ Refugee Camp System Aid Allocation with Uncertain Demand and Replenishment Cycles, *Presented by Shima Azizi, INFORMS Healthcare Meeting, 2021.*
- ◇ Reducing Risks of Human Trafficking: Improving Access to Housing and Supportive Services for Runaway and Homeless Youth in NYC, *Presented by Yaren Kaya, INFORMS Healthcare Meeting, 2021.*
- ◇ Increasing Access to Homeless Shelter Services for Youth At Risk of Human Trafficking, *Equity & AI Symposium, 2021.*
- ◇ A Comparative Study of Stability Representations for Solving Many-to-One Matching Problems with Ties and Incomplete Lists via Integer Optimization, *Discrete Optimization Talks (DOTs), Virtual, 2021.*
- ◇ Analyzing the Effect of Uncertainty in Predicted Match Quality Scores on Refugee Resettlement Optimization Outcomes, *Presented by Narges Ahani, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Refugee Camp System Aid Allocation With Uncertain Demand And Replenishment Cycles, *Presented by Shima Azizi, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Needs Estimation Of At-risk, Runaway And Homeless Youth In NYC Via Survey Design: A First Step To Disrupt The Supply Of Human Trafficking Networks, *Presented by Geri Dimas, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Modeling The United States (US) Defensive Asylum Process: A Queueing Approach, *Presented by Geri Dimas, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Estimating Effectiveness Of Identifying Human Trafficking Victims: An Application Of Data Envelopment Analysis (DEA) On The Nepal/India Border, *Presented by Malak El Khalkhali and Alex Bender, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Dynamic Matching For Refugee Resettlement, *Presented by Paul Gözl, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Optimizing The Selection, Scheduling, And Routing Of Foster Care Visitation Meetings, *Presented by Caroline Johnston, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ A Comparative Study Of Stability Representations For Optimization Models Of Many-to-one Matching Problems With Ties And Incomplete Lists, *Presented by Hoda Atef Yekta, INFORMS Annual Meeting, Washington, District of Columbia, 2020.*
- ◇ Placement Optimization in Refugee Resettlement, *University of Toronto, Toronto, Ontario, Canada, 2019.*
- ◇ Dynamic Management of Local Community Capacity for Refugee Resettlement, *Presented by Narges Ahani, INFORMS Annual Meeting, Seattle, WA, 2019.*
- ◇ Human Trafficking Transit Monitoring in Nepal: A Data Analytics Case Study, *Presented by Geri Dimas, INFORMS Annual Meeting, Seattle, WA, 2019.*
- ◇ Improving Community Paramedicine via Data Driven Optimization: Selective, Proactive Treatment of Patients, *Presented by Shima Azizi, INFORMS Annual Meeting, Seattle, WA, 2019.*
- ◇ Solving MAP Estimation via Mixed-integer Quadratic Optimization and Customized Branch-and-bound, *Presented by Pitchaya Wiratchotsatian, INFORMS Annual Meeting, Seattle, WA, 2019.*

- ◇ On Finding Stable and Efficient Solutions for Assigning Students to Project Centers with Cohort Considerations, *Presented by Pitchaya Wiratchotsatian, INFORMS Annual Meeting, Seattle, WA, 2019.*
- ◇ Placement Optimization in Refugee Resettlement, *University of Massachusetts, Amherst, Amherst, Massachusetts, 2019.*
- ◇ Improving Community Paramedicine via Data Driven Optimization: Selective, Proactive Treatment of Patients, *Poster Presentation by Shima Azizi, INFORMS Healthcare Conference, Cambridge, MA, 2019.*
- ◇ Placement Optimization in Refugee Resettlement, *Middle East Technical University, Ankara, Turkey, 2019.*
- ◇ A Broader Perspective: Integrating Societal Factors into Human Trafficking Shelter Location Models, *Presented by Kayse Maass, POMS Annual Conference, Washington DC, 2019.*
- ◇ Integrating Vehicle Routing and Scheduling to Optimize Foster Care Visitations, *Presented by Caroline Johnston, POMS Annual Conference, Washington DC, 2019.*
- ◇ Placement Optimization in Refugee Resettlement, *POMS Annual Conference, Washington DC, 2019.*
- ◇ A Data Analytic Approach to Understanding Human Trafficking Networks, *Presented by Renata Konrad, NSF Grantees Meeting, Washington DC, 2019.*
- ◇ Placement Optimization in Refugee Resettlement, *INFORMS Computing Society Conference, Knoxville, TN, 2019.*
- ◇ Solutions Powered by Algorithms and Blockchain, *Presented by Alessandro Martinello, Techfugees Global Summit, Paris, France, 2018.*
- ◇ Advances in Density-based Gaze Fixation Identification: Optimization for Outlier Sensitivity, and Automated Detection of Density-modulation Parameter, *Presented by Wen Liu, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ A Broader Perspective: Integrating Societal Factors Into Human Trafficking Shelter Location Models, *Presented by Dr. Kayse Maass, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Improving Community Paramedicine via Data Science and Optimization: Selective, Proactive Management of ED Patients, *Presented by Shima Azizi, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Machine Learning and Optimization for Service Classification and Assignment of Information Technology Services, *Presented by Pitchaya Wiratchotsatian, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Optimization-based Mechanism for Matching Students to International Projects, *Presented by Dr. Hoda Atef Yekta, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Refugee Resettlement via Integer Programming, *INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Integrating Vehicle Routing and Scheduling to Optimize Foster Care Visitations, *Poster presented by Caroline Johnston, INFORMS Annual Meeting, Phoenix, AZ, 2018.*
- ◇ Can Data Analytics and Mathematical Models Aid Anti-Human Trafficking and Social Justice Efforts?, *Presented by Dr. Kayse Maass, Human Trafficking and Social Justice Conference, Toledo, Ohio, 2018.*
- ◇ Placement Optimization for Refugee Resettlement, *Keynote presented by Dr. Alexander Teytelboym, OR60 Annual Conference, Lancaster, United Kingdom, 2018.*
- ◇ Measuring Focused Attention Using Fixation Inner-Density (FID), *Presented by Wen Liu, Human-Computer Interaction International Conference (HCII2018), Las Vegas, Nevada, 2018.*
- ◇ Integrating Vehicle Routing and Scheduling to Optimize Foster Care Visitations, *Poster presented by Caroline Johnston, SIAM Annual Meeting (AN18), Portland, OR, 2018.*



- ◇ Optimizing Refugee Resettlement Decisions, 19<sup>th</sup> ACM Conference on Economics and Computation (ACM EC18), Ithaca, NY, 2018.
- ◇ Refugee Resettlement via Integer Programming, *INFORMS Annual Meeting*, Houston, TX, 2017.
- ◇ Selecting Locations of Rehabilitative Shelters for Human Trafficking Survivors among States in the U.S.: A Decision Analytic Approach, *Presented by Dr. Kayse Lee Maass, INFORMS Annual Meeting*, Houston, TX, 2017.
- ◇ New Density-based Optimization Formulations and Algorithms to Identify Fixations in Gaze Data, *Presented by Wen Liu, INFORMS Annual Meeting*, Houston, TX, 2017.
- ◇ Optimal Compromises Between Efficiency And Practicality, *Cardiff University*, Cardiff, Wales, UK, 2017.
- ◇ Locating Rehabilitative Shelters for Survivors of Domestic Human Trafficking, *Presented by Dr. Renata A. Konrad, Conference on Health & Humanitarian Logistics*, Copenhagen, Denmark, 2017.
- ◇ Using Density to Identify Fixations in Gaze Data: Optimization-Based Formulations and Algorithms, *University of Massachusetts, Machine Learning and Friends*, Amherst, MA, 2017.
- ◇ Using Density to Identify Fixations in Gaze Data: Optimization-Based Formulations and Algorithms, *Presented by Wen Liu, INFORMS Computing Society Conference*, Austin, TX, 2017.
- ◇ Using Density to Identify Fixations in Gaze Data: Optimization-Based Formulations and Algorithms, *INFORMS Annual Meeting*, Nashville, TN, 2016.
- ◇ Optimal Compromises Between Efficiency And Practicality, *INFORMS Annual Meeting*, Nashville, TN, 2016.
- ◇ Human Trafficking: Opportunities for Operations Research and Management Science, *Presented by Dr. Renata A. Konrad, INFORMS Annual Meeting*, Nashville, TN, 2016.
- ◇ Scalable User Assignment in Power Grids: A Data Driven Approach, *Presented by Dr. Yanhua Li, ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems*, San Francisco, CA, 2016.
- ◇ Locating Rehabilitative Shelters for Survivors of Domestic Human Trafficking, *Presented by Dr. Renata A. Konrad, Conference on Health & Humanitarian Logistics*, Atlanta, GA, 2016.
- ◇ Does Pupillary Data Differ During Fixations and Saccades? Does it Carry Information About Task Demand?, *Poster Presented by Mina Shojaeizadeh, The Fourteenth Annual Pre-ICIS Workshop on HCI Research in MIS*, Fort Worth, TX, 2015.
- ◇ Sparse Mixed-Membership Matrix Factorization via Mixed-Integer Programming, *INFORMS Annual Meeting*, Philadelphia, PA, 2015.
- ◇ Finding Diverse Solutions of High Quality to Constraint Optimization Problems, *Presented by Dr. Thierry Petit, International Joint Conference on Artificial Intelligence (IJCAI)*, Buenos Aires, Argentina, July 2015. [Invited Oral (Long Talk) and Poster Presentation; Acceptance Rate 28.8% (575/1,996)].
- ◇ Sparse Mixed-Membership Matrix Factorization via Mixed-Integer Programming, *22<sup>nd</sup> International Symposium on Mathematical Programming*, Pittsburgh, Pennsylvania, 2015.
- ◇ Human Trafficking: Opportunities for Operations Research and Management Science, *Presented by Dr. Renata Konrad, Annual Industrial & Systems Engineering Research Conference (ISERC)*, Nashville, Tennessee, 2015.
- ◇ New Exact Formulations to Solve Generalizations and Extensions of the OPSM Problem, *INFORMS Computing Society Conference*, Richmond, Virginia, 2015.
- ◇ Assessing Both Solution Diversity and Solution Quality in Constraint Programming, *Presented by Dr. Thierry Petit, INFORMS Computing Society Conference*, Richmond, Virginia, 2015.
- ◇ Sparse Mixed-Membership Matrix Factorization via Mixed-Integer Programming, *INFORMS Computing Society Conference*, Richmond, Virginia, 2015.

- ◇ Sparse Mixed-Membership Matrix Factorization via Mixed-Integer Programming, *INFORMS Annual Meeting*, San Francisco, CA, 2014.
- ◇ Minimizing Water Requirements for Electricity Generation in Water Scarce Areas, *Presented by Dr. Erica Stults*, *INFORMS Annual Meeting*, San Francisco, CA, 2014.
- ◇ Finding Multiple Optimal Solutions to Binary Integer Programs, *University of Tennessee*, Knoxville, TN, 2013.
- ◇ Finding Diverse Solutions of High Quality to Binary (0-1) Integer Programs, *INFORMS Annual Meeting*, Minneapolis, MN, 2013.
- ◇ Analysis of the Effect of Technology Distribution on the Water Requirements for Energy Generation, *Presented by Dr. Erica Stults*, *INFORMS Annual Meeting*, Minneapolis, MN, 2013.
- ◇ Assessing and Maintaining Quality of Care for Veterans with Mental Health Disorders, *Presented by Sett Oo*, *INFORMS Health Care Conference*, Chicago, IL, 2013.
- ◇ The Role of Preventative Care for Congestive Heart Failure Patients in a Rural Health System, *Presented by Dr. Renata Konrad*, *INFORMS Health Care Conference*, Chicago, IL, 2013.
- ◇ Finding Diverse Solutions of High Quality to Binary (0-1) Integer Programs, *INFORMS Computing Society Conference*, Santa Fe, NM, 2013.
- ◇ Comparing Value Function-Based Approaches to Solving Two-stage Integer Programs, *INFORMS Annual Meeting*, Phoenix, AZ, 2012.
- ◇ Exact Solution Approaches for Generalizations to the Order-Preserving Submatrix Problem, *INFORMS Annual Meeting*, Phoenix, AZ, 2012.
- ◇ Solving a Class of Two-stage Stochastic Integer Programs (2SSIPs): Value Function Considerations, *INFORMS Optimization Society Conference*, Miami, FL, 2012.
- ◇ Using Constraint Aggregation to Solve a Class of Two-stage Stochastic Integer Programs, *INFORMS Annual Meeting*, Charlotte, NC, 2011.
- ◇ On a Level-Set Characterization of the Integer Programming Value Function and its Application to Stochastic Programming, *INFORMS Annual Meeting*, Austin, TX, 2010.
- ◇ Optimizing Interaction Code Parameters for Zinc Finger / DNA Recognition, *INFORMS Annual Meeting*, Austin, TX, 2010.
- ◇ Solving The OPSM Problem Using Integer Programming, *INFORMS Annual Meeting*, Austin, TX, 2010.
- ◇ Solving a Class of Two-Stage Stochastic Integer Programs Using Partial Value Functions, *12<sup>th</sup> International Conference on Stochastic Programming*, Halifax, Nova Scotia, Canada, 2010.
- ◇ On Global Optimization of Two-Stage Stochastic Integer Programs, *INFORMS Annual Meeting*, San Diego, CA, 2009.
- ◇ Solving The OPSM Problem Using Integer Programming, *Industrial Engineering Research Conference (IERC)*, Vancouver, BC, 2008.

## PROFESSIONAL ACTIVITIES AND SERVICE

- ◇ **President**, *Section on Public Sector Operations Research, INFORMS, 2022.*
- ◇ **Reviewer**, *Operations Research, Management Science, European Journal of Operational Research, Production and Operations Management, Transportation Science, IIE Transactions, Omega, Networks, Annals of Operations Research, IJCAI Conference, PLOS ONE, Optimization Letters, Journal of Global Optimization, IIE Transactions on Healthcare Systems Engineering, Journal of Combinatorial Optimization, Journal of the Operational Research Society, Journal of Industrial and Management Optimization, Sustainable Energy Technologies and Assessments.*
- ◇ **Invited Panelist**, *Partnerships for AI, NetHope Global Summit (Virtual), 2021.*
- ◇ **Invited Panelist**, *Doctoral Student Colloquium, INFORMS Annual Meeting, National Harbor, MD, 2020.*
- ◇ **Invited Session Chair**, *Public Sector OR, INFORMS Annual Meeting, Phoenix, AZ 2018; INFORMS Computing Society Conference, Austin, TX 2017; MSOM / Healthcare OM Cluster, INFORMS Annual Meeting, Philadelphia, PA 2015; INFORMS Computing Society Conference, Richmond, VA 2015; Computing Society, INFORMS Annual Meeting, San Francisco, CA 2014; Computing Society, INFORMS Annual Meeting, Minneapolis, MN 2013; Optimization/Global Optimization, INFORMS Annual Meeting, Phoenix, AZ 2012; Optimization/Global Optimization, INFORMS Annual Meeting, Charlotte, NC 2011; Stochastic Programming, INFORMS Annual Meeting, Austin, TX 2010; Stochastic Programming, INFORMS Annual Meeting, San Diego, CA, 2009; Operations Research, IIE Annual Conference, Vancouver, BC, 2008.*
- ◇ **Invited Panel Session Chair**, *Junior Faculty Interest Group, INFORMS Annual Meeting, San Francisco, CA 2014.*

## PREVIOUS EXPERIENCE

- ◇ Erie Insurance
  - Software Quality Assurance Analyst, 2003.
- ◇ Larson Texts, Incorporated
  - Product Specialist and Software Trainer, 2002.
- ◇ Hope For Homeless Youth
  - Assistant Director of Men's Rehabilitation Home, 2000-2001.
- ◇ Thomson West / Westlaw
  - Software Quality Assurance Analyst, 1999-2000.

## PROFESSIONAL SOCIETY MEMBERSHIPS

- ◇ Institute for Operations Research and the Management Sciences (INFORMS)
  - Section on Public Sector OR
  - Computing Society
  - Data Mining Society
  - Optimization Society