ESRA BÜYÜKTAHTAKIN TOY, PH.D.
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EDUCATION

2007–2009	Ph.D. in Industrial and Systems Engineering, University of Florida
2005–2007	M.S. in Management Science, Lehigh University
2002–2005	M.S. in Industrial Engineering, Bilkent University

EMPLOYMENT

2022–Present	Associate Professor (*tenured*), Grado Department of Industrial and Systems Engineering, Virginia Tech
2017–2022	Associate Professor, Mechanical and Industrial Engineering (*received tenure in May 2020*), New Jersey Institute of Technology
2011–2017	Assistant Professor, Industrial, Systems, and Manufacturing Engineering (*received tenure and promotion in April 2017*), Wichita State University
2009–2011	Visiting Assistant Professor, Systems and Industrial Engineering, University of Arizona

AREAS OF EXPERTISE

- Integrated Machine Learning and Optimization Methods
- Risk-Averse Stochastic Mixed-Integer Optimization and Deep Reinforcement Learning
- Emerging Applications in Ecological, Epidemiological, Agricultural, and Healthcare Systems: tackling invasive species outbreaks that create havoc on forests and agriculture, such as the emerald ash borer (EAB) and Sericea Lespedeza and infectious diseases that ravage the human body, such as the COVID-19, Ebola virus disease, and the HIV.
- Successful *Transdisciplinary Research Collaborations* with Computer Scientist, Biologists, Field Scientists, Forestry, Agricultural and Resource Economists, Entomologists, Game Theorists

HIGHLIGHTS (As of October 1, 2022)

Scholarship, Mentorship, and Teaching	Total
Published or Accepted Papers in Refereed Journals	35
Papers under Review in Refereed Journals	5
Chapters in Books	2
Papers in Refereed Conference Proceedings	14
Paper Presentations	>100
Total Funding Brought	$1.6M
Ph.D. Students Graduated (current employments: McKinsey & Company, Yale University, Montclair State University, SUNY at Plattsburgh, CVS, and Amazon)	6
Postdoctoral Research Associates (current employments: the University of Illinois at Springfield and Harrisburg University of Science and Technology)	2
Ph.D. Students Ongoing	3
INFORMS Best Publication Awards	5
Average Teaching Evaluation over All Undergraduate Courses Taught at NJIT	3.87/4.00

AWARDS AND HONORS

Early Career Awards

- National Science Foundation (NSF) CAREER Award, 2016
- NSF EPSCoR First Award, 2012

- Dwane and Velma Wallace Award for Excellence in Research, 2016
- Young Faculty Scholar Award, 2017
- INFORMS Minority Issues Forum (MIF) Early Career Award, 2016

Paper Awards/Recognition
- INFORMS ENRE **Best Publication Award** in Natural Resources, 2022
- INFORMS Computing Society **Harvey J. Greenberg Research Award** Honorable Mention, 2022
- **Featured Article Recognition** in the *ISE Magazine* of the IISE, 2022
- INFORMS MIF Paper Competition, **Finalist Paper**, 2019
- INFORMS MIF Paper Competition, **Finalist Paper**, 2017
- INFORMS ENRE **Best Publication Award** in Environment & Sustainability, 2015
- **Featured Article Recognition** in the *ISE* Magazine of the IISE, 2015
- **Best Paper Award** at International Conference on Environment and Biological Sciences, 2014
- Supervised MS Thesis that received Dora Wallace Outstanding Master's Thesis Award, 2014

Service Awards
- INFORMS Moving Spirit Award, 2016 (in recognition for services to INFORMS JFIG)
- INFORMS Volunteer Service Award, 2016

Teaching Recognition
- Nominated for the NJIT Newark College of Engineering Excellence in Teaching Award, 2022

COURSES DEVELOPED AND TAUGHT

Virginia Polytechnic Institute and State University (2022-present)
- ISE 2024 Probibility Foundations for Industrial and Systems Engineers. Spring 2023

New Jersey Institute of Technology (detailed teaching evaluations are in the links below)
- IE 439, Deterministic Models in Operations Research, (Fall '21 Teaching Evaluation: 4.00/4.00; Fall '21 Teaching Evaluation-IE Honors: 4.00/4.00); (Fall '20 Teaching Evaluation:3.91/4.00; Teaching Evaluation-IE Honors:3.80/4.00); (Fall '19 Teaching Evaluation:3.72/4.00; Teaching Evaluation-IE Honors:4.00/4.00); Fall '18 Teaching Evaluation:3.81/4.00; Teaching Evaluation-IE Honors:4.00/4.00), (Fall '19 Teaching Evaluation:3.72/4.00; Teaching Evaluation-IE Honors:4.00/4.00)
- IE 441, Information and Knowledge Engineering [Engineering/Business Data Analytics], (Spring '22 Teaching Evaluation: 3.94/4.00), (Spring '21 Teaching Evaluation: 3.95/4.00), (Spring '19 Teaching Evaluation: 3.63/4.00) (Spring '18 Teaching Evaluation: 3.70/4.00) [Topics include data analytics, descriptive statistics, data visualization, data mining, linear regression, forecasting, time-series analysis, optimization models, spreadsheet models, and MS Access.]
- IE 705, Mathematical Programming in Management Science, (doctoral level)

Wichita State University (2+2 course load in 2012–2016; 2+1 course load in 2011–2012)
- IME 850 (960C), Discrete Optimization, Fall 2012 and 2014, Spring 2016 (doctoral level)
- IME 753 (960B), Advanced Linear Programming, Fall 2013 and 2015 (graduate, doctoral level)
- IME 550, Operations Research, Fall 2011, Spring 2012, Spring and Fall 2013, Spring and Fall 2014, Spring and Fall 2015, Spring 2016, Fall 2016, Spring 2017 (undergraduate, graduate)
- IME 890 Independent Study, Spring and Fall 2013–2015, Spring 2016 (graduate)
- IME 990 Advanced Independent Study, Spring and Fall 2015 (graduate)
- IME 777 Graduate Colloquium

University of Arizona (2+1 course load in 2009–2011)
- SIE 440-540, Survey of Optimization, Spring 2010, Spring 2011 (graduate, distance learning)
- SIE 545, Fundamentals of Optimization, Fall 2009, Fall 2010 (graduate, doctoral level)

- SIE 544, Linear Programming, Fall 2010 (graduate, doctoral level)
- SIE 644, Integer Programming and Combinatorial Optimization, Spring 2010 (doctoral level)

FUNDED RESEARCH PROJECTS (TOTAL: **$ 1,564,728;** DR. BUYUKTAHTAKIN'S SHARE**: $ 1,241,398)**

- Principle Investigator (PI), U.S. Forest Service Grant Contract, "*Risk-Averse Surveillance and Intervention Planning for Emerald Ash Borer in Community Forests-Modification*," U.S. Forest Service Northern Research Station. St. Paul, MN, 06/23/2022–5/31/2023, $134,485 (co-PIs–Dr. Wenbo Cai from MIE NJIT and Dr. Robert Haight from U.S. Forest Service)

- Principle Investigator (PI), U.S. Forest Service Grant Contract, "*Optimizing public-private partnership under a limited budget and heterogeneous participants: a game-theoretic optimization approach to EAB management*," U.S. Forest Service Northern Research Station. St. Paul, MN, 04/26/2021–12/31/2023, $97,476 (co-PIs–Dr. Wenbo Cai from MIE NJIT and Dr. Robert Haight from U.S. Forest Service)

- Principle Investigator (PI), U.S. Forest Service Grant Contract, "*A Principal-Agent Game Theoretical Model for Intervention Planning of Emerald Ash Borer in Public and Private Forests*," U.S. Forest Service Northern Research Station. St. Paul, MN, 05/10/2019–12/31/2020, $61,186 (co-PIs–Dr. Wenbo Cai from MIE NJIT and Dr. Robert Haight from U.S. Forest Service)
- PI, U.S. Forest Service Grant Contract, "*Risk-Averse Surveillance and Intervention Planning for Emerald Ash Borer in Community Forests*," U.S. Forest Service Northern Research Station. St. Paul, MN, 07/01/2018–07/30/2019, $73,257 (co-PI–Dr. Robert Haight from U.S. Forest Service)
- PI, **NSF CAREER Award** CBET #1554018, "*CAREER: Dynamic Invasive Species Control Optimization Via Integrated Education and Research (DISCOVER)*," National Science Foundation (co-funded by the CBET/ENG Environmental Sustainability program and the Division of Mathematical Sciences in MPS/NSF), 03/01/16–02/28/21, $500,000.
- Co-PI, United States Department of Agriculture (USDA) Grant Award, "*Integrating Modeling and Field Experiments to Guide Weed Management in Rangeland Systems*," USDA Agriculture and Food Research Initiative (AFRI), 03/01/2016– 02/28/2021, $430,000 (PI–Dr. Houseman from Department of Biological Sciences, WSU).
- PI, U.S. Forest Service Grant Contract, "*Cost-effective Surveillance and Control Planning for Emerald Ash Borer in Community Forests*," U.S. Forest Service Northern Research Station. St. Paul, MN, 08/01/2016–08/31/2018, $129,775 (co-PI–Dr. Robert Haight from U.S. Forest Service)
- PI, "*Navigating the Fine Line between Economic and Environmental Impacts of Biofuel Production*," NSF EPSCoR, First Award, 05/01/2012–09/31/2014, $124,694.
- PI, "*Optimal Chemotherapy Treatment Planning Strategies with Application to Breast Cancer*," Flossie E. West Memorial Foundation Award, 5/01/2015–12/30/2016, $25,000.
- PI, "*Mixed-Integer Programming Models for the Optimal Management of Infectious Diseases,"* University Creative/Research Project Award (URCA), WSU, 12/01/2014-12/31/2015, $4,500.
- PI, "*Optimal Decision Strategies for Controlling Invasive Species under Uncertainty,"* Award for Research/Creative Projects in Summer (ARCS), WSU, 05/01/2014-08/01/2014, $4,000.
- PI, "*Sustainable Ecosystems through Optimal Invasive Species Control*," Strategic Engineering Research Fellowship, College of Engineering, WSU, 05/01/2012-12/26/2012, $20,000.
- Co-PI, "*Optimization and Control of Electric Vehicle Charging*," Multidisciplinary Research Project Award, WSU, 1/1/12-06/30/12, $5,000 (PI–Dr. Aravinthan from Department of Electrical Engineering and Computer Science, WSU).

JOURNAL PUBLICATIONS (*graduate student or postdoctoral student, **undergraduate student)

1. E. Kibis*, İ. Esra Büyüktahtakın, Robert G. Haight, Najmaddin Akhundov*, Kathleen Knight, and Charlie Flower, "A New Multi-Stage Stochastic Programming Approach to the Optimal Surveillance and Control of Emerald Ash Borer in Cities," *INFORMS Journal on Computing*, 33(2), 808–834, 2021.

    - INFORMS ENRE **Best Publication Award** in Natural Resources, 2022

    - INFORMS Computing Society **Harvey J. Greenberg Research Award** Honorable Mention, 2022

2. Sabah Bushaj*, Xuecheng Yin*, A. Beqiri, Donald Andrews**, and İ. Esra Büyüktahtakın (2021), "A simulation-deep reinforcement learning (SiRL) approach for epidemic control optimization" Accepted for publication in *Annals of Operations Research*, 2022. https://doi.org/10.1007/s10479-022-04926-7

3. İ. Esra Büyüktahtakın, "Stage-*t* Scenario Dominance for Risk-Averse Multi-Stage Stochastic Mixed-Integer Programs," *Annals of Operations Research*, 309, 1–35, 2022. https://doi.org/10.1007/s10479-021-04388-3

4. Xuecheng Yin*, İ. Esra Büyüktahtakın, and Bhumi Patel**, "COVID-19: Data-Driven Optimal Allocation of Ventilator Supply under Uncertainty and Risk," *European Journal of Operational Research*, 299(3), 1094–1110, 2022. https://doi.org/10.1016/j.ejor.2021.11.052

    - **First place** at the Dana Knox Graduate Student Research Showcase, NJIT, 2021

5. X. Yin* and İ. Esra Büyüktahtakın, "Risk-Averse Multi-stage Stochastic Programming to Optimizing Vaccine Allocation and Treatment Logistics for Effective Epidemic Response," *IISE Transactions on Healthcare Systems Engineering*, 12 (1), 52-74, 2022.

    - **Featured Article Recognition** in the *ISE Magazine*, April 2022

6. X. Yin* and Esra Büyüktahtakın, "A Multi-Stage Stochastic Programming Approach to Epidemic Resource Allocation with Equity Considerations ," *Health Care Management Science*, 24, 597–622, 2021.

7. Sabah Bushaj*, İ. Esra Büyüktahtakın, and Robert G. Haight, "Risk-averse multi-stage stochastic optimization for surveillance and operations planning of a forest insect infestation," *European Journal of Operational Research*, 299(3), 1094–1110, 2022. https://doi.org/10.1016/j.ejor.2021.08.035

8. Liu, X.*, Zheng, Z.*, Büyüktahtakın, İ. E., Zhou, Z., and Wang, P. (2021). "Battery asset management with cycle life prognosis," *Reliability Engineering & System Safety*, 216, 107948, 2021.

9. Sabah Bushaj*, İ. Esra Büyüktahtakın, Denys Yemshanov, and Robert G. Haight, "Optimizing surveillance and management of emerald ash borer in urban environments," *Natural Resources Modeling*, e12267, 2020, DOI: 10.1111/nrm.12267.

10. Sevilay Onal*, Najmaddin Akhundov*, İ. Esra Büyüktahtakın, Jennifer Smith*, Gregory R. Houseman, "An integrated simulation-optimization framework to optimize search and treatment path for controlling a biological invader," *International Journal of Production Economics*, 222, 107507, 2020.

11. E. Kibis* and İ. E. Büyüktahtakın, "Optimizing Multi-Modal Cancer Treatment under 3D Spatio-Temporal Tumor Growth," *Mathematical Biosciences*, 307:53-69, 2019.

12. O. Cosgun* and İ. E. Büyüktahtakın, "Stochastic Dynamic Resource Allocation for HIV Prevention and Treatment: An Approximate Dynamic Programming Approach," *Computers & Industrial Engineering*, 118, 423-439, 2018.

13. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Partial objective inequalities for the multi-item capacitated lot-sizing problem," *Computers & Operations Research*, 91, 132-144, 2018.

14. İ. E. Büyüktahtakın and R. G. Haight, "A review of operations research models in invasive species management: state of the art, challenges, and future directions," *Annals of Operations Research*, 271 (2), 357–403, 2018.

15. İ. E. Büyüktahtakın, E. des-Bordes*, and E. Kibis*, "A New Epidemics-Logistics Model: Insights into Controlling the Ebola Virus Disease in West Africa," *European Journal of Operational Research*, 265 (3), 1046-1063, 2018.

    - **Selected as Finalist for the 2019 INFORMS MIF Best Paper Competition**

16. M. M. Hasan*, İ. E. Büyüktahtakın, and E. Elamin, "A Multi-Criteria Ranking Algorithm for Determining Breast Cancer Therapy," *The International Journal of Management Science*: *OMEGA*, 82, 83-101, 2019.

17. Sachin G. Argade*, Visvakumar Aravinthan, İ. Esra Büyüktahtakın, and Siny Joseph, "Performance and Consumer Satisfaction-Based Bi-Level Tariff Scheme for EV Charging as a Virtual Power Plant," accepted for publication for *IET Generation, Transmission & Distribution*, 2018.

18. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Mixed-Integer Optimization Model for the Economic and Environmental Analysis of Biomass Production," *Biomass and Bioenergy*, 67, 8–23, 2014 (**IF: 3.249**).

    - **Won 2015 INFORMS ENRE Best Publication Award in Environment & Sustainability**

19. İ. E. Büyüktahtakın, J. C. Smith, J. C. Hartman, and S. Luo, "Parallel Asset Replacement Problem under Economies of Scale with Multiple Challengers," *The Engineering Economist*, 59 (4), 237–258, 2014.
    - **Recognized as the Featured Article of the *ISE* Magazine of the IISE, May 2015**

20. İ. E. Büyüktahtakın and J. C. Hartman, "A Mixed-Integer Programming Approach to the Parallel Replacement Problem under Technological Change," *International Journal of Production Research*, 54(3), 680-695, 2016.

    - **Selected as Finalist for 2017 INFORMS MIF Best Paper Competition**

21. E. Kibis* and İ. E. Büyüktahtakın, "Optimizing Invasive Species Management: A Mixed-Integer Linear Programming Approach," *European Journal of Operational Research*, 259, 308-321, 2017.

22. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Two-Stage Stochastic Mixed-Integer Programming Approach for the Analysis of Biofuel and Food Production," *Computers & Industrial Engineering*, 107, 251-263, 2017.

23. Z. Quick*, G. Houseman, and İ. E. Büyüktahtakın, "Assessing the Importance of Wind and Mammals as Seed Dispersal Vectors in an Invasive Legume," *Weed Research*, 57(1), 35-43, 2017.

24. E. des-Bordes* and İ. E. Büyüktahtakın, "Optimizing capital investments under technological change and deterioration: A case study on MRI machine replacement," *The Engineering Economist*, 62 (1), 105-131, 2017.

25. İ. E. Büyüktahtakın and N. Liu*, "Dynamic Programming Approximation Algorithms for the Capacitated Lot-Sizing Problem," *Journal of Global Optimization*, 65(2), 231-259, 2016.

26. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "Food vs Biofuel: An Optimization Approach to the Spatio-Temporal Analysis of Land-Use Competition and Environmental Impacts," *Applied Energy*, 140, 418–434, 2015 (**IF: 5.746**).

27. İ. E. Büyüktahtakın, E. Kibis*, H. I. Cobuloglu*, G. R. Houseman, and J. T. Lampe**, "An Age-Structured Bio-Economic Model of Invasive Species Management: Insights and Strategies for Optimal Control," *Biological Invasions*, 17, 2545–2563, 2015 (**IF: 2.855**).

28. Alperen Kantas*, H. Cobuloglu*, and İ. E. Büyüktahtakın, "Multi-source Capacitated Lot-sizing for Economically Viable and Clean Biofuel Production," *Journal of Cleaner Production*, 94, 116–129, 2015 (**IF: 4.959**).

29. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Stochastic Multi-criteria Decision Analysis for Sustainable Biomass Crop Selection," *Expert Systems with Applications*, 42(15–16), 6065–6074, 2015 (**IF: 2.981**).

30. İ.E. Büyüktahtakin, Z. Feng*, A.D. Olsson, G. Frisvold and F. Szidarovszky, "Invasive Species Control Optimization as a Dynamic Spatial Process: An Application to Buffelgrass (*Pennisetum ciliare*) in Arizona," *Invasive Plant Science and Manage*ment, 7(1), 132–146, 2014.

31. İ. E. Büyüktahtakın, Z. Feng*, and F. Szidarovszky, "A Multi-Objective Optimization Model for Invasive Species Control," *Journal of Operational Research Society*, 65, 1625–1635, 2014.

32. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, G. Frisvold, "Invasive Species Control Based on a Cooperative Game," *Applied Mathematics*, 4(10B), 54–59, 2013.

33. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, G. Frisvold, and A. Olsson, "A Dynamic Model of Controlling Invasive Species," *Computers and Mathematics with Applications*, 62, 3326–3333, 2011.

34. B. Song, İ. E. Büyüktahtakın, S. Ranka, and T. Kahveci, "Manipulating the Steady State of Metabolic Pathways," *IEEE/ACM Transactions on Computational Biology and Bioinformatics*, 8(3), 732–747, 2011.

35. J. C. Hartman, İ. E. Büyüktahtakın and J. C. Smith, "Dynamic-Programming-Based Inequalities for the Capacitated Lot-sizing Problem," *IIE Transactions*, 42(12), 915–930, 2010.

PAPERS UNDER REVIEW

1. Xuecheng Yin*, Sabah Bushaj*, Yue Yuan*, İ. Esra Büyüktahtakın, and B. Patel, "COVID-19: An Agent-Based Simulation-Optimization Approach to Vaccine Center Location Vaccine Allocation Problem," Under the second revision for *IISE Transactions*, 2022.

2. Chen Chen*, Wenbo Cai, İ. Esra Büyüktahtakın, and Robert G. Haight, "A Game-Theoretic Approach to Incentivize Landowners to Mitigate an Emerald Ash Borer Outbreak," Under the first revision for *IISE Transactions*, 2022.

3. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "Learning Optimal Solutions via an LSTM-Optimization Framework," Under Review for *SN-ORFO*, 2022.

4. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "An Expandable Learning-Optimization Framework for Sequentially Dependent Decision-Making," Under Review for *EJOR*, 2022.

5. Sabah Bushaj* and İ. Esra Büyüktahtakın (2022), "A K-means Supported Reinforcement Learning Framework to Multi-dimensional Knapsack" Under Review for *JOGO*, 2022.

REFEREED BOOK CHAPTERS

1. İ. E. Büyüktahtakın, "Dynamic Programming via Linear Programming," in *Wiley Encyclopedia of Operations Research and Management Science*, pp. 1561–1566, 2011.
2. B. Song, İ. E. Büyüktahtakın, N. Bandyopadhyay, S. Ranka, and T. Kahveci, "Identifying Enzyme Knockout Strategies on Multiple Enzyme Associations," in *Bioinformatics—Trends and Methodologies*, ed. Mahmood A. Mahdavi, pp. 353–370, ISBN: 978-953-307-282-1, InTech, 2011.

CONFERENCE PROCEEDINGS

1. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "An Expandable Learning-Optimization Framework for Sequentially Dependent Decision-Making," 17th INFORMS Workshop on Data Mining and Decision Analytics, October 15, 2022, Indianapolis, IN
2. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "A Deep Learning-Optimization Framework to Predict the Optimal Solution of a Mixed-Integer Program," 15th INFORMS Workshop on Data Mining and Decision Analytics, November 7, 2020, INFORMS Virtual
3. Sabah Bushaj*, A. Beqiri*, and İ. Esra Büyüktahtakın, "Predicting the COVID-19 Trajectory with a Simulation Deep Reinforcement Learning Approach" ISERC, 2022.
4. E. Y. Kibis*, İ. E. Büyüktahtakin, and Ali Dag, "Data Analytics Approaches for Breast Cancer Survivability: Comparison of Data Mining Methods," Submitted to the *Proceedings of the 2017 Industrial and Systems Engineering Research Conference (ISERC)*, Pittsburgh, PA, May 2017.
5. E. Y. Kibis* and İ. E. Büyüktahtakin, "A Review of Optimization Models on Invasive Species Management," *Proceedings of the 2016 Industrial and Systems Engineering Research Conference (ISERC)*, Anaheim, CA, May 2016.
6. M. M. Hasan*, İ. E. Büyüktahtakın, and E. Elamin, "Defining Multiple Criteria for Selecting an Effective Treatment Plan for Breast Cancer," *Proceedings of the 2016 ISERC*, Anaheim, CA, May 2016.
7. E. des-Bordes* and İ. E. Büyüktahtakin, "Optimal Replacement Strategies for Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Scanning Machines with Energy Concerns,"

Proceedings of the International Conference on Agriculture, Environment and Biological Sciences (ICFAE'14), Antalya, Turkey, June 2014

- **Won the Best Paper Award**

8. E. Y. Kibis* and İ. E. Büyüktahtakin, "Simulating Treatment Strategies for Invasive Species Control under Dispersal Uncertainty," *Proceedings of the ICFAE'14*, Antalya, Turkey, June 2014.
9. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Review of Lignocellulosic Biomass and Biofuel Supply Chain Models," *Proceedings of the 2014 ISERC*, Montreal, Canada, May 2014.
10. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Multi-Criteria Approach for Biomass Crop Selection under Fuzzy Environment," *Proceedings of the 2014 ISERC*, Montreal, Canada, May 2014.
11. H. Vali*, M. B. Yildirim, İ. E. Büyüktahtakın, and D. Malzahn, "Cash Flow Optimization in a Multi-Project Environment," *Proceedings of the 2012 ISERC*, Orlando, FL, May 2012.
12. T. Lampe** and İ. E. Büyüktahtakın, "An Energy Efficient Health-Care Asset Replacement Model Including Multiple Asset Types," *Proceedings of the 2012 ISERC*, Orlando, FL, May 2012.
13. İ. E. Büyüktahtakın, Z. Feng*, G. Frisvold and F. Szidarovszky, "A Game Theoretical Approach to Invasive Species Management," *Proceedings of the 2011 IERC*, Reno, NV, 2011.
14. İ. E. Büyüktahtakın and J. C. Hartman, "Parallel Replacement Problem under Technological Change and Deterioration," *Proceedings of the 2009 Industrial Engineering Research Conference (IERC)*, Miami, FL, 2009.

INVITED SEMINARS AND PANELS

1. İ. Esra Büyüktahtakın, "Scenario Dominance Approach to Stochastic Optimization with System Dynamics," Virginia Tech, March 3, 2022.
2. İ. Esra Büyüktahtakın, "Scenario Dominance for Risk-Averse Multi-Stage Stochastic Mixed-Integer Programs," Rutgers University Business School, Oct 15, 2020.
3. İ. Esra Büyüktahtakın, "Multi-Stage Stochastic Programming Approaches for the Optimal Surveillance and Control of Emerald Ash Borer in Cities and Forests," the "Mathematical Optimization of Systems Impacted by Rare, High-Impact Random Events*"* workshop at the Institute for Computational and Experimental Research in Mathematics (ICERM) at Brown University, June 24 – 28, 2019.
4. İ. E. Büyüktahtakın (Invited Panel Speaker), "IISE Doctoral Colloquium," ISERC 2019, Orlando, FL.
5. İ. E. Büyüktahtakın (Invited Panel Speaker), "Best Practices in Teaching OR/MS," INFORMS 2019, Seattle, WA.
6. İ. Esra Büyüktahtakın, E. Kibis*, Robert G. Haight, Najmaddin Akhundov*, Kathleen Knight, and Charlie Flower, "A New Multi-Stage Stochastic Programming Model and Cutting Planes for the Optimal Surveillance and Control of Emerald Ash Borer in Cities," Department of Mathematical Sciences, NJIT, October 2018.
7. İ. E. Büyüktahtakın (Invited Panel Speaker), "NJIT Panel Discussion on NSF CAREER Award," NJIT, October 2018.
8. İ. E. Büyüktahtakın (Invited Panel Speaker), "INFORMS JFIG Panel Discussion: Tips for Writing NSF CAREER Proposals," INFORMS Conference, Oct 2017, Houston, TX.
9. İ. E. Büyüktahtakın, E. Y. Kibis*, and R. Haight, "Stochastic Mixed-Integer Programming Approaches to the Optimal Surveillance and Control of Biological Invasions," Industrial and Manufacturing Systems Engineering, Kansas State University, March 2017.
10. İ. E. Büyüktahtakın, E. Y. Kibis*, and R. Haight, "Resource Allocation Models and Algorithms for the Optimal Control of Biological Invasions," Mechanical and Industrial Engineering, Northeastern University, January 2017.

11. İ. E. Büyüktahtakın, E. Y. Kibis*, and R. Haight, "Optimal Resource Allocation for Controlling Biological Invasions," Industrial and Systems Engineering, Rensselaer Polytechnic Institute (RPI), July, 2016.
12. İ. E. Büyüktahtakın (Invited Panel Speaker), "NSF CAREER Proposal Writing Panel," College of Engineering, WSU, May 2017.
13. İ. E. Büyüktahtakın, E. Y. Kibis*, and R. Haight, "Resource Allocation Models and Algorithms for the Optimal Control of Biological Invasions," Mechanical and Industrial Engineering, New Jersey Institute of Technology (NJIT), December 2016.
14. İ. E. Büyüktahtakın, "Writing your NSF CAREER Proposal: Success Tips," Mechanical Engineering Tenure Track Faculty Meeting, WSU, 2016.
15. İ. E. Büyüktahtakın, "Mathematical Models and Approaches to Invasive Species Management," February 2015, USDA Natural Resources Conservation Service (NRCS) Meeting, Salina, KS.

SELECT SCHOLARLY PRESENTATIONS (*indicates student or post-doctoral co-author)

1. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "An Expandable Learning-optimization Framework For Sequentially Dependent Decision-making," 2022 INFORMS Computing Society Conference, January 23-25, 2022.
2. İ. Esra Büyüktahtakın, "Risk-averse Multi-stage Stochastic Mixed-Integer Programs with Endogenous Uncertainty," 2021 INFORMS Conference, October 24-27, 2021.
3. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "An Expandable Learning-optimization Framework For Sequentially Dependent Decision-making," 2021 INFORMS Conference, October 24-27, 2021.
4. Xuecheng Yin*, Sabah Bushaj, İ. Esra Büyüktahtakın, "An Integrated Simulation-optimization Algorithmic Framework To Vaccine Distribution For Controlling The Covid-19," 2021 INFORMS Conference, October 24-27, 2021.
5. Chen Chen*, Wenbo Cai, İ. Esra Büyüktahtakın, and Robert G. Haight, "A Game-Theoretic Approach to Incentivize Landowners to Mitigate an Emerald Ash Borer Outbreak," 2021 INFORMS Conference, October 24-27, 2021.
6. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "Deep Learning Optimal Solutions: An LSTM-Optimization Framework," 2021 Virtual MIP Workshop, May 26-27, 2021
7. Sabah Bushaj* and İ. Esra Büyüktahtakın, "A Deep Reinforcement Learning Approach for Solving Multi-Dimensional Knapsack Problem," 2021 Virtual MIP Workshop, May 26-27, 2021
8. Xuecheng Yin*, İ. Esra Büyüktahtakın, "Mean-CVaR Multistage Stochastic Optimization to Controlling Epidemic Diseases," 2021 NSF Student Conference on COVID-19 Modeling, January 28 & 29, 2021.
9. Dogacan Yilmaz* and İ. Esra Büyüktahtakın, "An LSTM-Optimization Framework to Predict the Optimal Solution of a Mixed-Integer Program," 2020 INFORMS Conference, November 12, 2020.
10. Chen Chen*, Wenbo Cai, İ. Esra Büyüktahtakın, and Robert G. Haight, "A Game-Theoretic Approach to Incentivize Landowners to Mitigate an Emerald Ash Borer Outbreak," 2020 INFORMS MIF Poster Presentation Competition (Virtual Poster Presentation).
11. Sabah Bushaj*, İ. Esra Büyüktahtakın, and Robert G. Haight, "A Risk-Averse Multistage Stochastic Program to Optimize Surveillance and Management of a Forestry Epidemic," 2020 Virtual INFORMS Conference, 2020.
12. Xuecheng Yin*, İ. Esra Büyüktahtakın, "Mean-CVaR Multistage Stochastic Optimization To Controlling Epidemic Diseases," 2020 Virtual INFORMS Conference, 2020.
13. Sabah Bushaj*, İ. Esra Büyüktahtakın, Denys Yemshanov, and Robert G. Haight, "Optimizing Surveillance and Management of Emerald Ash Borer in Urban Environments," INFORMS Conference, Oct 2019, Seattle, WA.

14. İ. Esra Büyüktahtakın, Emmanuel des-Bordes*, and Eyyub Kibis*, "An Epidemics-Logistics Modeling Framework: Insights into Controlling the Ebola Virus Disease in West Africa," INFORMS Conference, Oct 2019, Seattle, WA.
    (**2019 INFORMS MIF Best Paper Competition, Finalist**)
15. İ. E. Büyüktahtakın, N. Liu*, J. C. Smith, and J. C. Hartman, "Recent Computational Advances For Solving the Multi-item Capacitated Lot-sizing Problem," INFORMS Conference, Oct 2019, Seattle, WA.
16. Xuecheng Yin*, İ. Esra Büyüktahtakın "Multi-stage Stochastic Resource Allocation for the Optimal Control of Epidemic Diseases," INFORMS Conference, Oct 2019, Seattle, WA.
17. İ. Esra Büyüktahtakın, Eyyub Kibis*, Robert G. Haight, Najmaddin Akhundov*, Kathleen Knight, and Charlie Flower, "A New Multi-Stage Stochastic Programming Model and Cutting Planes for the Optimal Surveillance and Control of Emerald Ash Borer in Cities," INFORMS Computing Society Conference, January 2019, Knoxville, TN.
18. Sevilay Onal*, Najmaddin Akhundov*, İ. Esra Büyüktahtakın, Jennifer Smith*, Gregory R. Houseman, "Detection and Control Operations Management of an Agricultural Invader Through Integrated Simulation-Optimization," POMS Conference, May 2019, Washington, DC.
19. Najmaddin Akhundov*, Sevilay Onal, İ. Esra Büyüktahtakın, Jennifer Smith, Gregory R. Houseman, "An integrated simulation-optimization framework to optimizing search and treatment path for controlling a biological invader," INFORMS Computing Society Conference, January 2019, Knoxville, TN.
20. Robert G. Haight, İ. Esra Büyüktahtakın, Eyyub Kibis*, Najmaddin Akhundov*, Kathleen Knight, and Charlie Flower, "A New Multi-Stage Stochastic Programming Model and Cutting Planes for the Optimal Surveillance and Control of Emerald Ash Borer in Cities," 18th Symposium on Systems Analysis in Forest Resources (SSAFR), March 3 - 7, 2019, Puerto Varas, Chile.
21. Najmaddin Akhundov*, İ. Esra Büyüktahtakın, Jennifer Smith, Gregory R. Houseman, "An integrated simulation-optimization framework to optimizing search and treatment path for controlling a biological invader," Dana Knox Student Research Showcase, NJIT, 2018 **(Najmaddin Akhundov, former Ph.D. student in SOAL, received first place among 2018 graduate researchers at Dana Knox Student Research Showcase, NJIT, 2018).**
22. İ. E. Büyüktahtakın, "Controlling Biological Invasions and Epidemics," NJIT Faculty Showcase, March 2018.
23. Sevilay Onal*, Najmaddin Akhundov*, İ. Esra Büyüktahtakın, Jennifer Smith, Gregory R. Houseman, "An integrated simulation-optimization framework to optimizing search and treatment path for controlling a biological invader," INFORMS Annual Meeting, November 2018, Phoenix, AZ (Poster Presentation).
24. İ. E. Büyüktahtakın, E. des-Bordes*, and, E. Kibis*, "A New Epidemics-Logistics Model: Insights into Controlling the Ebola Virus Disease in West Africa," NJIT Faculty Showcase, March, 2018 (Poster Presentation).
25. İ. E. Büyüktahtakın and J. C. Hartman, "A Mixed-Integer Programming Approach to the Parallel Replacement Problem under Technological Change," INFORMS Conference, Oct 2017, Houston, TX (**2017 INFORMS MIF Best Paper Competition, Finalist**)
26. İ. E. Büyüktahtakın "Multi-Stage Stochastic Optimization Approaches for Surveillance and Control of Invasive Species," INFORMS Conference, Nov 2016, Nashville, TN
    (**INFORMS MIF Rising Young Scholars Award Session**)
27. H. I. Cobuloglu* and İ. E. Büyüktahtakın "A Two-Stage Stochastic Mixed-Integer Programming Approach for the Analysis of Biofuel and Food Production," ISERC, May 2016, Anaheim, CA.

28. İ. E. Büyüktahtakın and N. Liu*, "Dynamic Programming Approximation Algorithms for the Capacitated Lot-sizing Problem," INFORMS Optimization Society Conference, March 2016, Philadelphia, PA.
29. H. I. Cobuloglu* and İ. E. Büyüktahtakın, "A Mixed-Integer Optimization Model for the Economic and Environmental Analysis of Biomass Production," INFORMS Annual Meeting, November 2015, Philadelphia, PA (**INFORMS ENRE Award Session**).
30. İ. E. Büyüktahtakın, E. Des-Bordes*, and E. Kibis*, "A Study on the Spatial Spread and Optimal Control of the 2014–2015 Ebola Outbreak in West Africa," INFORMS, Nov 2015, Philadelphia, PA.
31. İ. E. Büyüktahtakın, "Optimization Models and Approaches to Complex Systems," IME Colloquium, 2015, WSU, Wichita, KS.
32. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, G. Frisvold, and A. Olsson, "Sustainable Ecosystems through Operations Research with an Application to Invasive Species Control," LAS, WSU, 2013&15.
33. İ. E. Büyüktahtakın, E. Kibis*, H. I. Cobuloglu*, G. R. Houseman, and J. T. Lampe**, "An Age-, Density-, and Frequency-Structured Bio-Economic Model for Controlling Invasive Species," INFORMS Annual Meeting, November 2014, San Francisco, CA.
34. E. Kibis* and İ. E. Büyüktahtakın, "Simulating Treatment Strategies for Invasive Species Control under Dispersal Uncertainty," ICFAE'14, June 2014, Antalya, Turkey.
35. E. des-Bordes* and İ. E. Büyüktahtakın, "Optimal Replacement Strategies for Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Scanning Machines with Energy Concerns," ICFAE'14, 2014, Antalya, Turkey.
36. İ. E. Büyüktahtakın, E. Kibis*, H. I. Cobuloglu*, G. R. Houseman, and J. T. Lampe**, "Controlling the Invasion of Sericea Lespedeza with Limited Budgets: Insights from an Optimization Model," Kansas Natural Resources Conference, January 2013, Wichita, KS; INFORMS, October 2013, Minneapolis, MN.
37. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Partial Objective Function Inequalities for the Multi-item Capacitated Lot-sizing Problem," INFORMS, October 2012, Phoenix, AZ; ISMP, August 2012, Berlin, Germany; INFORMS Computing Society Conference, January 2013, Santa Fe, NM.
38. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, "A Multi-Objective Optimization Model for Invasive Species Control," INFORMS Optimization Society Conference, February 2012, Miami, FL; WIEA, June 2012, Istanbul, Turkey.
39. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Parallel Replacement Problem with Multiple Asset Types under Economies of Scale," INFORMS Annual Meeting, November 2011, Charlotte, NC.
40. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, "Invasive Species Control Based on a Cooperative Game," INFORMS Annual Meeting, November 2011, Charlotte, NC.
41. İ. E. Büyüktahtakın, Z. Feng*, F. Szidarovszky, "A Game Theoretical Approach to Invasive Species Management," IIE Annual Conference 2011, May 2011, Reno, NV.
42. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Valid Inequalities for the Parallel Replacement Problem under Economies of Scale," INFORMS Northeast Conference, May 2011, Amherst, MA.
43. İ. E. Büyüktahtakın, Z. Feng*, "The Mixed 0-1 Knapsack Problem with Generalized Upper Bound Constraints," INFORMS Student Chapter Seminar, March 2011, University of Arizona, Tucson, AZ.
44. İ. E. Büyüktahtakın, Z. Feng*, "0-1 Knapsack Problem with Generalized Upper Bound Constraints and a Single Variable," INFORMS Annual Meeting, November 2010, Austin, TX.
45. İ. E. Büyüktahtakın, "Optimization Approaches to Energy Power Systems under Uncertainty," SIE Solar Research Group Meeting, October 2010, University of Arizona, Tucson, AZ.
46. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Dynamic and Mixed-Integer Programming Approaches to Capacitated Lot-Sizing Problems," SIE Seminar, November 2009, University of Arizona, Tucson, AZ.
47. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Partial Objective Function Inequalities for the Multi-Item Capacitated Lot-Sizing Problem," INFORMS Annual Meeting, October 2009, San Diego, CA.

48. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Integer Programming-Based Approaches to Parallel Replacement Problem under Technological Change," INFORMS Annual Meeting, Oct. 2009, San Diego, CA.
49. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Utilizing Partial Objective Function Inequalities for the Multi-Item Capacitated Lot-Sizing Polyhedron," MIP Workshop, June 2009, University of California, Berkeley, CA.
50. İ. E. Büyüktahtakın, J. C. Smith, and J. C. Hartman, "Dynamic Programming-Based Inequalities for the Multi-Item Capacitated Lot-Sizing Problem," INFORMS Annual Meeting, October 2008, Washington, DC.
51. İ. E. Büyüktahtakın, J. C. Hartman, and J. C. Smith, "Dynamic Programming-Based Inequalities for the Capacitated Lot-Sizing Problem," MIP Workshop, August 2008, Columbia University, New York City, NY; INFORMS Annual Meeting, November 2007, Seattle, WA.

STUDENT ADVISING

PhD Dissertation Supervision—Three (3) Students IN PROGRESS

Dogacan Yilmaz (NJIT), September 2019–Present
- Dissertation Topic: "*Integrated Optimization and Machine Learning Approaches*"
- Defended his doctoral proposal on December 13, 2021

Bahar Kargar (NJIT), September 2021–Present
- Dissertation Topic: "*Data-Driven Optimization of Vaccine Supply Chains*"

Elson Cibaku (NJIT), September 2021–Present
- Dissertation Topic: "*Machine Learning Algorithms to Solving Vehicle Routing Problem*"

PhD Dissertation Supervision— Six (6) Students COMPLETED

Dr. Chen Chen (NJIT), September 2017–August 2022 (co-advised with Dr. Selina Cai)
- Dissertation Topic: "*Optimizing Incentives for Systems with Heterogeneous Agents*"
- Current Position: Research Scientist in Optimization and Machine Learning at **Amazon**

Dr. Sabah Bushaj (NJIT), September 2018–August 2021
- Dissertation Topic: "*Multi-Stage Stochastic Optimization and Reinforced Learning for Forestry Epidemics and Disease Control Planning*"
- Current Position: **Assistant Professor** of Data Analytics, State University of New York, Plattsburgh, NY, 2021

Dr. Xuecheng Yin (NJIT), September 2018–August 2021
- Dissertation Topic: "*Stochastic Programming Approaches for Epidemic Control and Logistics Planning*"
- First place at the 2021 Virtual Dana Knox Graduate Student Research Showcase, NJIT, 2021
- Current Position: Postdoctoral Research Associate, **Yale School of Public Health**, 2021

Dr. Eyyub Kibis (WSU), August 2013–May 2017
- Dissertation Topic: "*Optimization Approaches to Controlling Biological Invasions and Cancer*"
- Current Position: **Assistant Professor** of Business Analytics, Montclair State University, Montclair, NJ, since August 2020

Dr. Halil Cobuloglu (WSU), January 2012–May 2015

- Dissertation: "*Optimization Approaches for the Economic and Environmental Analysis of Biomass, Biofuel, and Food Production"*
- Current Position: Management Consulting Professional at **McKinsey & Company**, Boston, MA, since August 2015

Dr. Emmanuel Des-Bordes (WSU), August 2012–December 2015
- Dissertation: "*Mixed-Integer Optimization Approaches to Resource Allocation Problems with Applications in Healthcare Asset Management and Epidemics"*
- Current Position: Assistant Professor of Mathematics, Blue Ridge Community College, Weyers Cave, VA

Postdoctoral Student Supervision— COMPLETED

Dr. Sevilay Onal (NJIT), July 2018–2019
- Research Project: "*An Integrated Simulation-Optimization Framework for Controlling Biological Invaders*"
- Current Position: **Assistant Professor** of Business Administration at the University of Illinois at Springfield since August 2019

Dr. Ozlem Cosgun (WSU), August 2015–2016
- Research Topic: "*Approximate Dynamic Programming Approaches to Research Allocation for HIV Infection Management*"
- Current Position: **Assistant Professor** of Information Systems and Operations Management at Harrisburg University of Science and Technology since August 2019

Doctoral Student Research Supervision

Dr. Zhuo Feng (University of Arizona), August 2008– May 2012
- Research Topic: "*Spatial and Dynamic Optimization of Controlling Invasive Species with Applications to Buffelgrass in Arizona*" (This joint work resulted in 4 journal papers)
- Current Position: Data Analyst and Scientist, **Microsoft**, CA

Najmaddin Akhundov (NJIT), September 2017– May 2018
- Research Topic: "*An integrated simulation-optimization framework to optimize search and treatment path for controlling a biological invader*"
- First place at the Dana Knox Student Graduate Research Showcase, NJIT, 2018
- Current Position: PhD Student, University of Tennessee

MS Thesis Supervision—COMPLETED

Rajesh Kumar Narasimhan (WSU), August 2011 – August 2013
- Thesis: "*Controlling the Invasion of Sericea Lespedeza (Lespedeza Cuneata) with Limited Budgets: Insights from an Optimization Model*"
- Current Position: Continuous Improvement Engineer, Celadon Trucking, Rocky Mount, NC

Ning Liu (WSU), Spring 2012–December 2013
- Thesis: "*Approximate Dynamic Programming Algorithms for Production Planning Problems*"
- Current Position: Industrial Engineer, China

Alperen Burak Kantas (WSU), August 2012–December 2014
- Thesis: "*Capacitated Lot-Sizing with CO_2 Emission Constraints: An Application to Biofuel Production in Kansas*"
- Current Position: Industrial Engineer, CESSNA Aircraft Company, Wichita, Kansas

Mostafa Hasan (WSU), May 2015–December 2016

- Thesis Topic: "*Determining an Effective Treatment Plan for Breast Cancer: A Multi-Criteria Decision Model and Algorithm*"
- Current Position: PhD Student, Wichita State University, Kansas

Undergraduate Research Supervision—COMPLETED

Eisha Syeda (NJIT) (expected graduation August 2023)
- *Project*: Optimal allocation of vaccines in New Jersey
- Received the 2022 McNair Summer Research Program Award

Bhumi Patel (NJIT) (expected graduation August 2021)
- Publication: Xuecheng Yin*, İ. Esra Büyüktahtakın, and B. Patel, "COVID-19: Data-Driven Optimal Allocation of Ventilator Supply under Uncertainty and Risk," second revision submitted to EJOR, 2021.
- Received the 2021 Provost Undergraduate Research and Innovation (URI) Award
- Current Position: Graduate Student, Industrial and Operations Engineering, University of Michigan Ann Arbor

Donald Andrews (NJIT) (expected graduation August 2021)
- Publication: Sabah Bushaj*, Xuecheng Yin*, A. Beqiri, Donald Andrews**, and İ. Esra Büyüktahtakın (2021), "A simulation-deep reinforcement learning (SiRL) approach for epidemic control optimization" Under Review for ANOR, 2021.

Tate Lampe (WSU) (graduated August 2013)
- Publication: T. Lampe** and İ. E. Büyüktahtakın, "An Energy Efficient Health-Care Asset Replacement Model Including Multiple Asset Types," *Proceedings of the 2012 ISERC*, Orlando, FL, May 2012.
- Current Position: Industrial Engineer, Spirit AeroSystems, Wichita, Kansas

Tanner Lampe (WSU) (graduated August 2014)
- Publication: İ. E. Büyüktahtakın, E. Kibis, H. I. Cobuloglu, G. R. Houseman, and J. T. Lampe, "An Age-Structured Bio-Economic Model of Invasive Species Management: Insights and Strategies for Optimal Control," *Biological Invasions*, 17, 2545–2563, 2015.
- Current Position: Application Engineer, Wescon Controls, Wichita, Kansas

Ph.D. Dissertation Committee Member
- Wen Zhu, "Consolidation of Picked Orders in an Online Fulfillment Warehouse with Explosive Storage", NJIT, December 2020 (expected graduation)
- Nadi Atalla, "Interventions of Waterjet Technology in Human Skin Incisions", NJIT, May 2019
- Jayangika Dahanayake, "Molecular Dynamics Simulations of Candida Antarctica Lipase B in Non-Aqueous solvent," Chemistry, August 2017
- Bassam Jaradat (WSU), "Evaluation of Software Quality and Performance," IME, August 2017 (expected graduation)
- Mohammad Kanan, "An Integrated quality software development model," IME, May 2015
- Saeed Rubaiee, "Energy-Aware Scheduling with Dynamic Electricity Pricing," IME, December 2015
- Eylem Asmatulu, "End-of-Life Analysis of Advanced Materials," IME, May 2013

M.S. Thesis Committee Member
- Luca Gandolfi, MIE, NJIT, April, 2019
- Neda Tahrani, ME, November, 2016
- Praveen Kumar Bollavaram, ME, August 2016
- Aishvarya Hariharan, EECS, May 2016
- Jacob Handle, Biological Sciences May 2016

- Xiaolong Cui, IME, December 2015
- Jiang Cheng, EECS, February 2014
- Brandon Michael Williams, Biological Sciences, December 2013
- Ali Ghazinezami, ME, December 2013
- Abdus Samad; Ahsan Khan, EECS, May 2012
- Julinda Lyn Tayl, EECS, December 2011

Select Student Accomplishments

- Xuecheng Yin, Ph.D. candidate in SODAL, received
    - First place among graduate researchers at the 2021 Virtual Dana Knox Student Research Showcase, NJIT, 2021
- Bhumi Patel, Ph.D. candidate in SODAL, won
    - The 2021 Provost Undergraduate Research and Innovation (URI) Award
- Najmaddin Akhundov, former Ph.D. student in SODAL, received
    - First place among graduate researchers at Dana Knox Student Research Showcase, NJIT, 2018
- Halil Cobuloglu, former Ph.D. student in SODAL, received
    - 2015 INFORMS ENRE Best Publication Award in Environment and Sustainability, Philadelphia, 2015
    - NSF Travel Award, 2014
    - WSU Outstanding Doctoral Student Award, WSU, 2014
    - IME Best Graduate Student Award, WSU, 2015
    - Second place for Best Oral Presentation Competition at university-wide Graduate Research and Scholarly Projects (GRASP) Symposium, WSU, 2013
    - First place (twice) in IME Best Graduate Project Competition in Engineering Open House at WSU, 2013 and 2014
- Ning Liu, former M.S. student in SODAL, won
    - Dora Wallace Outstanding Master's Thesis Award, WSU, 2014
- Emmanuel Des-Bordes, former Ph.D. student in SODAL, won
    - INFORMS MIF Paper Competition, Finalist, INFORMS Annual Meeting, Seattle, WA, 2019
    - Best Paper Award at ICFAE'14, Antalya, Turkey
    - Finalist for MIF Best Poster Presentation at 2014 INFORMS Annual Meeting, San Francisco, CA, 2014
- Rajesh Kumar Narasimhan, former M.S. student in SODAL, won
    - First place in IIE Professional Chapter Best Graduate Project Competition in Engineering Open House at WSU, 2013
- Tanner Lampe, former undergraduate student in SODAL, won
    - Second place in Best Poster Presentation from Undergraduate Research and Creative Activity Forum (URCAF) at WSU, 2013
- Tate Lampe, former undergraduate student in SODAL, won
    - Second place for Best Operations Management Project Award from APICS WSU Student Chapter, 2012
    - Best IME Undergraduate Project Award in Engineering Open House, WSU, 2012
- Eyyub Kibis, current Ph.D. student in SODAL, won
    - INFORMS MIF Paper Competition, Finalist, INFORMS Annual Meeting, Seattle, WA, 2019
    - Outstanding Doctoral Student Award, WSU, 2015
    - First place in IME Best Graduate Project Competition in Engineering Open House, WSU, 2015
    - Best Poster Presentation Award at CGRS, Topeka, KS, 2016
- Mostafa Hasan, a SODAL MS graduate,
    - Won the Kansas Bio prize at the 14th Annual Capitol Graduate Research Summit, Topeka, KS, 2017.

SERVICE AND PROFESSIONAL ACTIVITIES

Organizational Offices Held

- President, INFORMS Junior Faculty Interest Group (JFIG), 2014–2015
- Vice President/President-Elect of INFORMS JFIG, 2013–2014
- Secretary, INFORMS JFIG, 2011–2013

Editorial Board

- Associate Editor, *Springer Nature Operations Research Forum* (*SN ORFO*), 2019–Present

Reviewer Activities

- Panelist at NSF Proposal Review Panel, Environmental Sustainability Program, 2018
- Panelist at NSF Proposal Review Panel, 2017
- Panelist at NSF Proposal Review Panel, 2015
- Ad-hoc reviewer for NSF, 2016 & 2017 & 2019 & 2020
- Judge for IISE Best Student Poster Presentation Competition, 2016
- Judge, IISE Doctoral Colloquium Best Student Poster Presentation Competition, 2019
- Judge and committee member for INFORMS ENRE Best Publication Award in Environment & Sustainability, 2013
- Judge, 2018 INFORMS ENRE student best paper award, 2018
- Peer reviewer for several journals: *Operations Research*, *IIE Transactions*, *EJOR*, *Production and Operations Management*, *The Engineering Economist*, *International Journal of Production Research*, *International Journal of Production Economics*, *JORS*, *Health Care Management Science*, *Optimization Letters*, *Omega*, *Journal of Global Optimization*, *Computers & Operations Research*, *Applied Mathematical Modeling*, *IEEE Transactions on Intelligent Transportation Systems*, *Expert Systems with Applications*, *Risk Analysis*, *The American Journal of Agricultural Economics*, *Annals of Management Science*, *Processes, and Sustainability*, *Ecological Modeling*, *Journal of Agricultural and Applied Economics*

Conference Leadership and Session Organization

- "OR Track Chair" of the IISE Annual Conference, May 2020, Orlando, FL
- Session Organizer and Chair, "ThD35. Algorithmic Advances in MIP under Uncertainty and Risk for the Logistics Planning of Epidemics," INFORMS 2020 Virtual Conference
- Session Organizer and Chair, "MB24 - MCDM and Medicine / Healthcare: A Mutually Beneficial Relationship- II," INFORMS 2019, Seattle, WA
- Session Organizer and Chair, "WB44 - Joint Session ICS/ENRE: Computational Advances in Spatial Conservation," INFORMS 2019, Seattle, WA
- *Cluster Chair*, JFIG cluster of INFORMS Annual Meeting, San Francisco, CA, 2014
- Session Chair, "Spatio-Temporal Conservation Models for Controlling Biological Invasions," INFORMS Annual Meeting, Houston, TX, 2017
- Session Chair, "Optimal Resource Allocation for Epidemics Management," INFORMS Computing Society Conference, Austin, TX, 2017
- Session Organizer and Chair, "Optimal Surveillance and Control of Bio-Invasions," ENRE Sponsored Session, INFORMS Annual Meeting, Nashville, TN, 2016
- Session Chair, "Logistics," INFORMS Optimization Society Conference, Philadelphia, PA, 2016
- Session Organizer and Chair, "Optimization Approaches for Invasive Species and Pest Management," ENRE Sponsored Session, INFORMS Annual Meeting, Philadelphia, PA, 2015
- Organizer and host of the USDA NRCS and SOAL group meeting at WSU, 2014
- Session Organizer and Chair, "Models and Analysis of Invasion Processes," Joint JFIG/ENRE-Sponsored Session, INFORMS Annual Meeting, San Francisco, CA, 2014

- Session Organizer and Chair, "Optimization Methods for Invasive Species Control," Joint-JFIG/ENRE Sponsored Session, INFORMS Annual Meeting, San Francisco, CA, 2014
- Keynote Speaker, The International Conference on Agriculture, Environment and Biological Sciences, June 2014, Antalya, Turkey
- Organizer, 2011–2013 INFORMS JFIG Paper Competitions (prepared and announced call for papers, helped competition committee chair with logistics of paper competition, and preparation of awards)
- Organizer, 2013 and 2014 INFORMS JFIG luncheons and business meetings
- Panel Organizer and Moderator, "10 Habits of a Successful Assistant Professor," JFIG-Sponsored Panel, INFORMS Annual Meeting, Minneapolis, MN, 2013
- Panel Co-Organizer and Moderator, "Speed Networking," JFIG-Sponsored Panel (with WORMS and MIF), INFORMS Annual Meetings, Minneapolis, MN, 2013 and San Francisco, CA, 2014
- Invited Speaker, "2014 INFORMS JFIG/ACORD," at Association of Chairs of OR Departments (ACORD) meeting, INFORMS Annual Meeting, San Francisco, CA, 2014.
- Invited Speaker, "2013 INFORMS JFIG/CIEADH," at Council of Industrial Engineering Academic Department Heads (CIEADH) meeting, INFORMS Annual Meeting, Minneapolis, MN, 2013.
- Invited Speaker, "2012 INFORMS JFIG/ACORD," at ACORD meeting, INFORMS Annual Meeting, Phoenix, AZ, 2012.
- Session Organizer and Chair, "JFIG Paper Competition I and II," JFIG-Sponsored Sessions, INFORMS Annual Meeting, Phoenix, AZ, 2012
- Session Organizer and Chair, "JFIG Paper Competition I," JFIG-Sponsored Session, INFORMS Annual Meeting, Charlotte, NC, 2011
- Session Organizer and Chair, "Sustainable and Reduced-Cost Energy Systems through Optimization," JFIG-Sponsored Session, INFORMS Annual Meeting, Charlotte, NC, 2011

Professional Affiliations

- Institute for Operations Research and the Management Sciences (INFORMS)
  - INFORMS Optimization Society (IOS)/Computing Society (ICS)/ Energy, Natural Resources, and Environment Society (ENRE)/ Health Applications Society (HAS)/ Manufacturing and Service Operations Management Society (MSOM)
  - INFORMS Junior Faculty Interest Group (JFIG)
  - INFORMS Minority Issues Forum (MIF)
  - INFORMS Women in ORMS (WORMS)
- Institute of Industrial and Systems Engineers (IISE)
- Mathematical Optimization Society (MOS)
- Alpha Pi Mu Honor Society

Internal Service Activities

- Member, NJIT Fellowship Committee, NJIT, 2021–present
- Member, Faculty Senate Strategic Planning Steering Committee, NJIT, 2019–present
- Member, Faculty Research Advisory Board (FRAB) Committee on Research Cyberinfrastructure, NJIT, 2020–present
- Member, Faculty Research Advisory Board, NJIT, 2020–present
- Invited Panel Speaker, "NJIT Panel Discussion on NSF CAREER Award," NJIT, October 2018
- Judge, Dana Knox Student Research Showcase, NJIT, 2018
- Member, MIE Department Recruitment Committee, NJIT, 2019–Present
- Member, ABET Committee for the IE program, NJIT, 2018–Present
- Member, IE Undergraduate Curriculum Committee, NJIT, 2017–Present
- Presenter, "NJIT Faculty Showcase," NJIT, March 2018
- Served as a department representative at the "NCE Graduate Meet and Greet Event," NJIT, October 10, 2019
- Served as a department representative at the "Academic Showcase, Engineering Open House," NJIT, October 13, 2019

- Contributed to the presentation at the "Industrial Engineering Academic Information Session," Engineering Open House, NJIT, October 13, 2019
- Represented the NJIT MIE department at the Council of Industrial Engineering Academic Department Heads (CIEADH) meeting, INFORMS Annual Meeting, October 2019, Seattle, WA
- Represented the NJIT MIE department at the CIEADH meeting, IISE Annual Conference, May 2019, Orlando, FL
- Represented the NJIT MIE department at the CIEADH meeting, INFORMS Annual Meeting, November 2018, Phoenix, AZ
- Chair, Faculty Senate Student Scholarship and Student Aid Committee, WSU, 2016–2017
- Member, Faculty Senate Student Scholarship and Student Aid Committee, WSU, 2014–2016
- Member, Diversity Committee, College of Engineering, 2013–2017
- Member, Dean's Undergraduate Research Advisory Board, 2016–2017
- Member, Graduate Committee, IME Department, WSU, 2013–2017
- Member, Awards Committee, IME Department, WSU, 2011–2013
- Member, Administrative Assistant Search Committee, IME Department, WSU, 2015
- Member, Graduate Committee, SIE Department, University of Arizona, 2009–2011
- Panelist at Graduate School Student Orientation, WSU, 2014
- Faculty Advisor, Alpha Pi Mu, 2014–present
- Faculty Advisor, Young Educators Society (YES-Wichita), 2014–present
- Judge, Graduate Research and Scholarly Program (GRASP) Symposium, 2014
- Judge, WSU Engineering Open House, 2011–present
- Judge, Project Lead the Way, WSU, 2014
- Judge, WISE Student Competition, WSU, 2014
- Coordinator and Instructor, IME 777 Graduate Colloquium, Fall 2016; Founder and Faculty Advisor of Systems Optimization and Analytics Laboratory (SOAL), 2011–present; Host for USDA NRCS and SOAL group meeting at WSU, 2014; Invited seminar speaker on "Problem Solving and Decision Making" to middle school students in Summer STEM camp, Wichita, KS, 2015 & 2016

Selected Publicity and Recognition in the News

- INFORMS Computing Society **Harvey J. Greenberg Research Award**, 2022, Indianapolis, IN
- News release here published by the US Forest Service Office of Communications featuring our paper (Kibis, Buyuktahtakin, and Haight et al., 2021), 2022
- Wichita State assistant professor wins $500,000 award for work on ecological systems, *The Wichita Eagle*, February 29, 2016
- 2016 INFORMS Minority Issues Forum (MIF) Early Career Award, INFORMS Conference, Nov 2016, Nashville, TN
- 2016 INFORMS Moving Spirit Award, INFORMS Conference, Nov 2016, Nashville, TN
- 2015 INFORMS Subdivision Awards, *ORMS Today* 13(1), 55, February 2016.
- 2016 INFORMS Volunteer Service Award, INFORMS Conference, Nov 2016, Nashville, TN
- Engineering professor receives grant for research on invasive species, *The SunFlower*, March 22, 2016
- Engineering professor wins National Science Foundation award, *Wichita State News*, Feb 29, 2016
- February academe at Wichita State, *Wichita State News*, February 8, 2016
- USDA AFRI Award, *USDA*.gov, March 1, 2016
- Professors' research helping Kansas ranchers with invasive weeds, *Wichita State News*, Aug. 16, 2016
- Wichita State University invasive species research will aid Kansas ranchers, *Newswise*, Aug. 24, 2016
- Award Abstract #1554018, CAREER: Dynamic Invasive Species Control Optimization via Integrated Education and Research (DISCOVER), *NSF.gov*, February 18, 2016
- Mixed-integer programming for asset replacement, *Industrial Engineer* 47(3), 54, March 2015.
- WSU graduate, undergraduate students present research in Topeka, Feb. 11-12, *Wichita State News*, February 9, 2015
- First Awardee Projects–2012, *NSF Kansas EPSCoR*, May, 2012