

## İ. ESRA BÜYÜKTAHTAKIN, PH.D.

Associate Professor

Department of Industrial, Systems, and Manufacturing Engineering  
Wichita State University

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### EDUCATION

- 2007–2009 Ph.D. in Industrial and Systems Engineering, University of Florida  
*Dissertation:* “Mixed Integer Programming Approaches to Lot-Sizing and Asset Replacement Problems,” *Advisors:* Joseph Hartman and Cole Smith
- 2005–2007 M.S. in Management Science, Lehigh University, *Advisor:* Joseph Hartman
- 2002–2005 M.S. in Industrial Engineering, Bilkent University  
*Thesis:* “An Integer Programming-Based Algorithm for the Resource Constrained Project Scheduling Problem,” *Advisor:* Osman Oguz

### EMPLOYMENT

- 2017–Present Associate Professor, Industrial, Systems, and Manufacturing Engineering, Wichita State University
- 2011–2017 Assistant Professor, Industrial, Systems, and Manufacturing Engineering, Wichita State University
- 2009–2011 Visiting Assistant Professor, Systems and Industrial Engineering, University of Arizona
- 2007–2009 Research Assistant, Industrial and Systems Engineering, University of Florida
- 2005–2007 Research and Teaching Assistant, Industrial and Systems Engineering, Lehigh University
- 2004–2005 Teaching Assistant, Industrial Engineering, Bilkent University
- 2001–2002 Undergraduate Teaching Assistant, Industrial Engineering, Fatih University

### RESEARCH INTERESTS

- Operations Research (OR)
- Mixed-Integer Programming and Dynamic Programming
- Optimization under Uncertainty
- Traditional and Non-Traditional Applications of OR in Resource Allocation for Surveillance and Control of Invasive Species and Epidemic Outbreaks, Humanitarian Logistics, Energy and the Environment, Sustainability, Production and Logistics Planning, and Capital Asset Replacement under Technological Advances

### AWARDS AND HONORS

- National Science Foundation (NSF) CAREER Award, 2016
  - “Recognizes and supports the early career-development activities of teacher-scholars, who are most likely to become the academic leaders of the 21<sup>st</sup> century.”
  - This program is the NSF's most prestigious award for new faculty members.
- INFORMS Minority Issues Forum (MIF) Early Career Award, 2016
  - “Recognizes exceptional OR/MS researchers, who have shown promise at the beginning of their academic or industrial career.”
- INFORMS ENRE Best Publication Award in Environment & Sustainability, 2015
  - This award is given by the INFORMS Energy, Natural Resources, and Environment (ENRE) Society to the best refereed publication in environment and sustainability. Nominated publications are judged with respect to impact and originality.
- WSU Young Faculty Scholar Award, 2017
- Dwane and Velma Wallace Award for Excellence in Research, Wichita State University, 2016
- INFORMS Moving Spirit Award, 2016 (in recognition for services to INFORMS JFIG)

- INFORMS Volunteer Service Award, 2016
- U. S. Department of Agriculture AFRI Grant Award, 2016
- NSF EPSCoR First Award, 2012
- Featured Article Recognition in the *IE* Magazine of the Institute of Industrial Engineering (IIE), 2015
- Best Paper Award at International Conference on Environment and Biological Sciences, 2014
- Flossie E. West Memorial Foundation Award, Wichita State University (WSU), 2015
- Award for Research/Creative Projects in Summer (ARCS), WSU, 2014
- Strategic Engineering Research Fellowship, WSU, 2012
- Multidisciplinary Research Project Award (MURPA), WSU, 2011
- Supervised Research Receiving First Place (three times) in Industrial and Manufacturing Engineering (IME) Best Graduate Project Competitions in Engineering Open House, WSU, 2013–2015
- Supervised MS Thesis that received Dora Wallace Outstanding Master’s Thesis Award, 2014
- Invitee, National Effective Teaching Institute (NETI) Workshop, San Antonio, TX, 2012; INFORMS Teaching Effectiveness Colloquium, Charlotte, 2011; IIE Faculty Colloquium, Reno, NV, 2011; DSI New Faculty Development Consortium, San Diego, CA, 2010
- Invitee, NSF CAREER Proposal Writing Workshop, Atlanta, GA, 2010
- University of Arizona, SIE Departmental Funding, 2009–2011
- Invitee, IIE Doctoral Colloquium, 2009
- Invitee, INFORMS Future Academician Colloquium, 2008
- Recipient of the Mixed-Integer Programming (MIP) Workshop 2009 Travel Grant, University of California, Berkeley, 2009; MIP Workshop 2008 Travel Grant, Columbia University, 2008
- University of Florida ISE Department Graduate Assistantship, 2007-2009; Lehigh University ISE Department Graduate Assistantship, 2005–2007; Bilkent University Foundation Tuition Fellowship, 2002–2005; Fatih University Foundation four-year full scholarship, 1998–2002

## COURSES DEVELOPED AND TAUGHT

**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: \$1,213,439; DR. BUYUKTAHTAKIN’S SHARE: \$935,287)

- Principle Investigator (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; \*\*undergraduate student)

Publication Website: <http://webs.wichita.edu/?u=esrabuyuktahtakin&p=/publications/>

1. E. Kibis\* and İ. E. Büyükahtakin, “Optimizing Invasive Species Management: A Mixed-Integer Linear Programming Approach,” *European Journal of Operational Research*, 259, 308-321, 2017. doi.org/10.1016/j.ejor.2016.09.049
2. H. I. Cobuloglu\* and İ. E. Büyükahtakin, “A Two-Stage Stochastic Mixed-Integer Programming Approach for the Analysis of Biofuel and Food Production,” *Computers & Industrial Engineering*, In press, 2017.
3. H. I. Cobuloglu\* and İ. E. Büyükahtakin, “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**
4. İ. E. Büyükahtakin, 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**
5. Z. Quick\*, G. Houseman, and İ. E. Büyükahtakin, “Assessing the Importance of Wind and Mammals as Seed Dispersal Vectors in an Invasive Legume,” *Weed Research*, In press, 2017.
6. E. des-Bordes\* and İ. E. Büyükahtakin, “Optimizing New Technology Investments under Deterioration: A Case Study on MRI Replacement,” *The Engineering Economist*, In press, 2017.
7. İ. E. Büyükahtakin and N. Liu\*, “Dynamic Programming Approximation Algorithms for the Capacitated Lot-Sizing Problem,” *Journal of Global Optimization*, 65(2), 231-259, 2016.
8. İ. E. Büyükahtakin 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.

9. H. I. Cobuloglu\* and İ. E. Büyükahtakın, “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).
10. İ. E. Büyükahtakın, 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).
11. Alperen Kantas\*, H. Cobuloglu\*, and İ. E. Büyükahtakın, “Multi-source Capacitated Lot-sizing for Economically Viable and Clean Biofuel Production,” *Journal of Cleaner Production*, 94, 116–129, 2015 (IF: 4.959).
12. H. I. Cobuloglu\* and İ. E. Büyükahtakın, “A Stochastic Multi-criteria Decision Analysis for Sustainable Biomass Crop Selection,” *Expert Systems with Applications*, 42(15–16), 6065–6074, 2015 (IF: 2.981).
13. İ.E. Büyükahtakın, 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 Management*, 7(1), 132–146, 2014.
14. İ. E. Büyükahtakın, Z. Feng\*, and F. Szidarovszky, “A Multi-Objective Optimization Model for Invasive Species Control,” *Journal of Operational Research Society*, 65, 1625–1635, 2014.
15. İ. E. Büyükahtakın, Z. Feng\*, F. Szidarovszky, G. Frisvold, “Invasive Species Control Based on a Cooperative Game,” *Applied Mathematics*, 4(10B), 54–59, 2013.
16. İ. E. Büyükahtakın, 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.
17. B. Song, İ. E. Büyükahtakın, 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.
18. J. C. Hartman, İ. E. Büyükahtakın and J. C. Smith, “Dynamic-Programming-Based Inequalities for the Capacitated Lot-sizing Problem,” *IIE Transactions*, 42(12), 915–930, 2010.

#### REFEREED BOOK CHAPTERS

1. İ. E. Büyükahtakın, “Dynamic Programming via Linear Programming,” in *Wiley Encyclopedia of Operations Research and Management Science*, pp. 1561–1566, 2011.
2. B. Song, İ. E. Büyükahtakın, 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.

#### PAPERS UNDER REVIEW

1. İ. E. Büyükahtakın, J. C. Smith, and J. C. Hartman, “Partial objective inequalities for the multi-item capacitated lot-sizing problem,” under review, 2016.
2. İ. E. Büyükahtakın, E. Des-Bordes\*, and E. Kibis\*, “A New Optimization Model: Insights into Controlling the Ebola Virus Disease in West Africa,” under review, 2016.
3. M. M. Hasan\*, İ. E. Büyükahtakın, and E. Elamin, “A Multi-Criteria Ranking Algorithm for Determining Breast Cancer Therapy,” under review, 2017.

#### CONFERENCE PROCEEDINGS

1. E. Y. Kibis\*, İ. E. Büyükahtakın, 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.

2. E. Y. Kibis\* and İ. E. Büyükahtakin, “A Review of Optimization Models on Invasive Species Management,” *Proceedings of the 2016 Industrial and Systems Engineering Research Conference (ISERC)*, Anaheim, CA, May 2016.
3. M. M. Hasan\*, İ. E. Büyükahtakin, and E. Elamin, “Defining Multiple Criteria for Selecting an Effective Treatment Plan for Breast Cancer,” *Proceedings of the 2016 ISERC*, Anaheim, CA, May 2016.
4. E. des-Bordes\* and İ. E. Büyükahtakin, “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**
5. E. Y. Kibis\* and İ. E. Büyükahtakin, “Simulating Treatment Strategies for Invasive Species Control under Dispersal Uncertainty,” *Proceedings of the ICFAE'14*, Antalya, Turkey, June 2014.
6. H. I. Cobuloglu\* and İ. E. Büyükahtakin, “A Review of Lignocellulosic Biomass and Biofuel Supply Chain Models,” *Proceedings of the 2014 ISERC*, Montreal, Canada, May 2014.
7. H. I. Cobuloglu\* and İ. E. Büyükahtakin, “A Multi-Criteria Approach for Biomass Crop Selection under Fuzzy Environment,” *Proceedings of the 2014 ISERC*, Montreal, Canada, May 2014.
8. H. Vali\*, M. B. Yildirim, İ. E. Büyükahtakin, and D. Malzahn, “Cash Flow Optimization in a Multi-Project Environment,” *Proceedings of the 2012 ISERC*, Orlando, FL, May 2012.
9. T. Lampe\*\* and İ. E. Büyükahtakin, “An Energy Efficient Health-Care Asset Replacement Model Including Multiple Asset Types,” *Proceedings of the 2012 ISERC*, Orlando, FL, May 2012.
10. İ. E. Büyükahtakin, Z. Feng\*, G. Frisvold and F. Szidarovszky, “A Game Theoretical Approach to Invasive Species Management,” *Proceedings of the 2011 IERC*, Reno, NV, 2011.
11. İ. E. Büyükahtakin and J. C. Hartman, “Parallel Replacement Problem under Technological Change and Deterioration,” *Proceedings of the 2009 Industrial Engineering Research Conference (IERC)*, Miami, FL, 2009.

#### **SELECT SCHOLARLY PRESENTATIONS (\*indicates student co-author)**

1. İ. E. Büyükahtakin “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)**
2. H. I. Cobuloglu\* and İ. E. Büyükahtakin “A Two-Stage Stochastic Mixed-Integer Programming Approach for the Analysis of Biofuel and Food Production,” ISERC, May 2016, Anaheim, CA.
3. İ. E. Büyükahtakin, “Optimal Resource Allocation for Controlling Biological Invasions and Epidemic Spread,” Industrial and Systems Engineering, RPI, July, 2016.
4. İ. E. Büyükahtakin and N. Liu\*, “Dynamic Programming Approximation Algorithms for the Capacitated Lot-sizing Problem,” INFORMS Optimization Society Conference, March 2016, Philadelphia, PA.
5. İ. E. Büyükahtakin, “Writing your NSF CAREER Proposal: Success Tips,” Mechanical Engineering Tenure Track Faculty Meeting, WSU, 2016.
6. H. I. Cobuloglu\* and İ. E. Büyükahtakin, “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)**.
7. İ. E. Büyükahtakin, 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.
8. İ. E. Büyükahtakin, “Optimization Models and Approaches to Complex Systems,” IME Colloquium, 2015, WSU, Wichita, KS.
9. İ. E. Büyükahtakin, “Mathematical Models and Approaches to Invasive Species Management,” February 2015, USDA Natural Resources Conservation Service (NRCS) Meeting, Salina, KS.

10. İ. E. Büyükahtakın, 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.
11. İ. E. Büyükahtakın, 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.
12. E. Kibis\* and İ. E. Büyükahtakın, "Simulating Treatment Strategies for Invasive Species Control under Dispersal Uncertainty," ICFAE'14, June 2014, Antalya, Turkey.
13. E. des-Bordes\* and İ. E. Büyükahtakın, "Optimal Replacement Strategies for Magnetic Resonance Imaging (MRI) and Computed Tomography (CT) Scanning Machines with Energy Concerns," ICFAE'14, 2014, Antalya, Turkey.
14. İ. E. Büyükahtakın, 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.
15. İ. E. Büyükahtakın, 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.
16. İ. E. Büyükahtakın, 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.
17. İ. E. Büyükahtakın, 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.
18. İ. E. Büyükahtakın, Z. Feng\*, F. Szidarovszky, "Invasive Species Control Based on a Cooperative Game," INFORMS Annual Meeting, November 2011, Charlotte, NC.
19. İ. E. Büyükahtakın, Z. Feng\*, F. Szidarovszky, "A Game Theoretical Approach to Invasive Species Management," IIE Annual Conference 2011, May 2011, Reno, NV.
20. İ. E. Büyükahtakın, 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.
21. İ. E. Büyükahtakın, Z. Feng\*, "The Mixed 0-1 Knapsack Problem with Generalized Upper Bound Constraints," INFORMS Student Chapter Seminar, March 2011, University of Arizona, Tucson, AZ.
22. İ. E. Büyükahtakın, Z. Feng\*, "0-1 Knapsack Problem with Generalized Upper Bound Constraints and a Single Variable," INFORMS Annual Meeting, November 2010, Austin, TX.
23. İ. E. Büyükahtakın, "Optimization Approaches to Energy Power Systems under Uncertainty," SIE Solar Research Group Meeting, October 2010, University of Arizona, Tucson, AZ.
24. İ. E. Büyükahtakın, 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.
25. İ. E. Büyükahtakın, 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.
26. İ. E. Büyükahtakın, 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.
27. İ. E. Büyükahtakın, 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.
28. İ. E. Büyükahtakın, 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.

29. İ. E. Büyüктаhtakın, 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—COMPLETED

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

- Dissertation: “*Optimization Approaches for the Economic and Environmental Analysis of Biomass, Biofuel, and Food Production*”
- Current Position: Senior Research Analyst at **McKinsey & Company**, Boston, MA, 2015

Dr. Emmanuel Des-Bordes (WSU), August 2012–December 2015 (graduated)

- Dissertation: “*Mixed-Integer Optimization Approaches to Resource Allocation Problems with Applications in Healthcare Asset Management and Epidemics*”
- Current Position: Adjunct Instructor of Mathematics, Bethel College, Newton, KS, 2015

### PhD Dissertation Supervision—IN PROGRESS

Eyyub Kibis (WSU), August 2013–May 2017 (expected graduation)

- Dissertation Topic: “*Optimization Approaches to Controlling Biological Invasions and Diseases*”
- Passed Dissertation Proposal Examination on 8/16/2016

### Postdoctoral Student Supervision— COMPLETED

Ozlem Cosgun (WSU), August 2015–2016

- Research Topic: “*Approximate Dynamic Programming Approaches to Research Allocation for HIV Infection Management*”

### MS Thesis Supervision—COMPLETED

Rajesh Kumar Narasimhan (WSU), August 2011 – August 2013 (graduated)

- 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 (graduated)

- Thesis: “*Approximate Dynamic Programming Algorithms for Production Planning Problems*”
- Current Position: Industrial Engineer, China

Alperen Burak Kantas (WSU), August 2012–December 2014 (graduated)

- Thesis: “*Capacitated Lot-Sizing with CO<sub>2</sub> 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*”

### Undergraduate Research Supervision—COMPLETED

Tate Lampe (WSU) (graduated August 2013)

- **Publication:** T. Lampe\*\* and İ. E. Büyüktaktın, “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. Büyüktaktın, 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**

- Jayangika Dahanayake, “Molecular Dynamics Simulations of Candida Antarctica Lipase B in Non-Aqueous solvent,” Chemistry, August 2017 (expected graduation)
- 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**

- 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

#### **Selected Student Accomplishments**

- Halil Cobuloglu, former Ph.D. student in SOAL, received 2015 INFORMS ENRE Best Publication Award in Environment and Sustainability, as well as NSF Travel Award, 2014
- Halil Cobuloglu also won the WSU Outstanding Doctoral Student Award, 2014; IME Best Graduate Student Award, 2015; second place for Best Oral Presentation Competition at university-wide Graduate Research and Scholarly Projects (GRASP) Symposium, WSU, 2013
- Halil Cobuloglu also received 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 SOAL, won Dora Wallace Outstanding Master’s Thesis Award, WSU, 2014
- Emmanuel Des-Bordes, former Ph.D. student in SOAL, won Best Paper Award at ICFAE’14, and was selected as finalist for Best Poster Presentation at INFORMS MIF, 2014
- Rajesh Kumar Narasimhan, former M.S. student in SOAL, won first place in IIE Professional Chapter Best Graduate Project Competition in Engineering Open House at WSU, 2013
- Tanner Lampe, former undergraduate student in SOAL, won second place in Best Poster Presentation from Undergraduate Research and Creative Activity Forum (URCAF) at WSU, 2013
- Tate Lampe, former undergraduate student in SOAL, won second place for Best Operations Management Project Award from APICS WSU Student Chapter, as well as Best IME Undergraduate Project Award in Engineering Open House, WSU, 2012



- Halil Cobuloglu (2014), Emmanuel des-Bordes (2015), and Eyyub Kibis (2014 and 2016) were selected to represent WSU at State Capitol Graduate Research Summit (CGRS)
- Eyyub Kibis, current Ph.D. student in SOAL, won WSU Outstanding Doctoral Student Award, 2015; first place in IME Best Graduate Project Competition in Engineering Open House, WSU, 2015; Best Poster Presentation Award at CGRS, 2016

## **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

### **Conference Leadership and Session Organization**

- Cluster Chair, JFIG cluster of INFORMS Annual Meeting, San Francisco, CA, 2014
- 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

### **Reviewer Activities**

- Panelist at NSF Proposal Review, 2015
- Ad-hoc reviewer for NSF, 2016 & 2017

- Judge for ISERC Best Student Poster Presentation Competition, 2016
- Judge and committee member for INFORMS ENRE Best Publication Award in Environment & Sustainability, 2013
- Peer reviewer for several journals: *Operations Research*, *IIE Transactions*, *Production and Operations Management*, *The Engineering Economist*, *International Journal of Production Research*, *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*

### 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 Form (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

- Chair, Faculty Senate Student Scholarship and Student Aid Committee, WSU, 2016–present
- Member, Faculty Senate Student Scholarship and Student Aid Committee, WSU, 2014–present
- Member, Diversity Committee, College of Engineering, 2013–present
- Member, Dean’s Undergraduate Research Advisory Board, 2016–present
- Member, Graduate Committee, IME Department, WSU, 2013–present
- 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

- [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