

Andrew J. Schaefer  
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**Education:**

Ph.D. in [Industrial and Systems Engineering](#), 2000.  
[Georgia Institute of Technology](#), Atlanta, Georgia.  
Dissertation Title: *Airline Crew Scheduling under Uncertainty*.  
Dissertation Advisor: George Nemhauser.  
Minor: Computer Science.

Masters of Computational and Applied Mathematics, 1994.  
[Rice University](#), Houston, Texas.  
Concentration in Operations Research.

Bachelor of Arts, 1994.  
[Rice University](#), Houston, Texas.  
Double major in Computational and Applied Mathematics / Mathematical Economic  
Analysis with Honors.

**Primary Academic Appointments:**

*Noah Harding Chair and Professor of Computational and Applied Mathematics*, Rice  
University, August 2015-Present.

*John A. Swanson Chair in Engineering*, University of Pittsburgh, April 2015-July 2015.

*William Kepler Whiteford Professor of Industrial Engineering*, University of Pittsburgh,  
September 2012-March 2015.

*Professor with tenure*, Department of Industrial Engineering, University of Pittsburgh,  
September 2011-July 2015.

*Associate Professor with tenure*, Department of Industrial Engineering, University of  
Pittsburgh, 2006-2011.

*Assistant Professor*, Department of Industrial Engineering, University of Pittsburgh, 2000-  
2006.

**Journal Publications:**

- J1. John, A., R. Sun<sup>†</sup>, L. Maillart, **A. J. Schaefer**, E. Hamilton Spence and M. T. Perrin,  
“Macronutrient Variability in Human Milk from Donors to a Milk Bank: Implications  
for Feeding Preterm Infants,” 2019. To appear in *PLoS ONE*.
- J2. Tavaslioglu, O.<sup>†</sup>, O. A. Prokopyev and **A. J. Schaefer**, “Solving Stochastic and Bilevel  
Mixed-Integer Programs via a Generalized Value Function,” 2018. To appear in  
*Operations Research*.

- J3. Ng, S., et al. “Utility of Surveillance Imaging in Patients with Head and Neck Cancer Treated with Definitive Radiotherapy,” 2018. To appear in *Cancer*.
- J4. Dehghanian, A.<sup>†</sup>, M. Kurt<sup>†</sup> and **A. J. Schaefer**, “Optimizing over Pure Stationary Equilibria in Consensus Stopping Games,” 2018. To appear in *Mathematical Programming Computation*.
- J5. Nemati, S.<sup>†</sup>, Z. Icten, L. Maillart and **A. J. Schaefer**, “Mitigating Information Asymmetry in Liver Allocation,” 2018. To appear in *INFORMS Journal on Computing*.
- J6. Batun, S.<sup>†</sup>, A. Bhandari, **A. J. Schaefer**, and M. S. Roberts, “Optimal Liver Acceptance for Risk-Sensitive Patients,” 2018. *Service Science* volume 10, number 3, pages 320-333.
- J7. Tavaslioglu, O.<sup>†</sup>, T. Lee, S. Valeva and **A. J. Schaefer**, “On the Structure of the Inverse-Feasible Region of a Linear Program,” 2018. *Operations Research Letters* volume 46, number 1, pages 147-152.
- J8. Özaltın, O.<sup>†</sup>, O. A. Prokopyev, and **A. J. Schaefer**, “Optimal Design of the Seasonal Influenza Vaccine with Manufacturing Autonomy,” 2018. *INFORMS Journal on Computing* volume 30, number 2, pp. 371-387.
- J9. A. M. Stuebe, B. J. Jegier, E. B. Schwarz, B. D. Green, A. G. Reinhold, T. T. Colaizy, D. L. Bogen, **A. J. Schaefer**, J. Jeier, N. S. Green, M. C. Bartick, “An Online Calculator to Estimate the Impact of Changes in Breastfeeding Rates on Population Health for Women and Children,” 2017. *Breastfeeding Medicine* volume 12, number 10, pages 645-658.
- J10. M. C. Bartick, E. B. Schwarz, B. D. Green, A. G. Reinhold, B. J. Jegier, T. T. Colaizy, D. L. Bogen, **A. J. Schaefer**, and A. M. Stuebe, “Suboptimal Breastfeeding in the United States: Maternal and Pediatric Health Outcomes and Costs,” 2017. *Maternal & Child Nutrition* **13**:e12366.
- J11. Nemati, S.<sup>†</sup>, O. A. Shylo, O. A. Prokopyev and **A. J. Schaefer**, “The Surgical Patient Routing Problem: A Central Planner Approach,” 2016. *INFORMS Journal on Computing* volume 28, number 4, pages 657-673.
- J12. Colaizy, T. T., M. C. Bartick, B. J. Jegier, B. D. Green, A. G. Reinhold, **A. J. Schaefer**, D. L. Bogen, E. B. Schwarz, A. M. Stuebe, “Impact of Preterm Formula on the Healthcare and Mortality Costs of Necrotizing Enterocolitis in Very Low Birthweight Infants,” 2016. *Journal of Pediatrics* volume 175, pages 100-105.
- J13. Eckman<sup>1</sup>, D. E., L. M. Maillart and **A. J. Schaefer**, “Optimal Pinging Frequencies in the Search for an Immobile Beacon,” 2016. *IIE Transactions* volume 48, number 6, pages 489-500.
- J14. Khademi, A.<sup>†</sup>, D. Saure, **A. J. Schaefer**, M. S. Roberts and R. S. Braithwaite, “HIV Treatment in Resource-Limited Environments: Treatment Coverage and Insights,” 2016. *Value in Health* volume 18, issue 8, pp. 1113-1119.

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<sup>†</sup> Denotes one of my current or graduated PhD students.

<sup>1</sup> Denotes a former undergraduate researcher.

- J15. Dehghanian, A.<sup>†</sup> and **A. J. Schaefer**, “[Superadditive Characterizations of Pure Integer Programming Feasibility](#),” 2015. *Optimization Letters* volume 10, number 1, pp. 181-188.
- J16. Lamperski, J.<sup>†</sup> and **A. J. Schaefer**, “A Polyhedral Characterization of the Inverse-Feasible Region of a Mixed-Integer Program,” 2015. *Operations Research Letters* volume 43, number 6, pp. 575-578.
- J17. Khademi, A.<sup>†</sup>, D. Saure, **A. J. Schaefer**, M. S. Roberts and R. S. Braithwaite, “[The Price of Nonabandonment: HIV in Resource-Limited Settings](#),” 2015. *Manufacturing & Service Operations Management* volume 17, number 4, pp. 554-570.
- J18. Sun, R.<sup>†</sup>, O. A. Shylo and **A. J. Schaefer**, “[Totally Unimodular Multistage Stochastic Programs](#),” 2015. *Operations Research Letters* volume 43, number 1, pp. 29-33.
- J19. Kabiri, M., A. B. Jazwinski, M. S. Roberts, **A. J. Schaefer**, and J. Chhatwal, “[The Changing Burden of Hepatitis C Infection in the United States: Model-Based Predictions](#),” 2014. *Annals of Internal Medicine* volume 161, number 3, pp. 170-180.
- J20. Khademi, A.<sup>†</sup>, R. S. Braithwaite, D. Saure, **A. J. Schaefer**, K. Nucifora and M. S. Roberts, “[Should Expectations about the Rate of New Antiretroviral Drug Development Impact the Timing of HIV Treatment Initiation and Expectations about Treatment Benefits?](#)” 2014. *PLoS ONE* volume 9, issue 6, e98354.
- J21. Shylo, O. V., O. A. Prokopyev, and **A. J. Schaefer**, “[Stochastic Operating Room Scheduling for High Volume Specialties under Block Booking](#),” 2013. *INFORMS Journal on Computing* volume 25, number 4, pp. 682-692.
- J22. Sandikci, B.<sup>†</sup>, L. M. Maillart, **A. J. Schaefer**, and M. S. Roberts, “[Alleviating the Patient’s Price of Privacy through a Partially Observed Waiting List](#),” 2013. *Management Science* volume 59, number 8, pp. 1836-1854.
- J23. Kaufman, D. L., and **A. J. Schaefer**, “[Robust Modified Policy Iteration](#),” 2013. *INFORMS Journal on Computing* volume 25, number 3, pp. 396-410.
- J24. Kong, N.<sup>†</sup>, **A. J. Schaefer**, and S. Ahmed, “[Totally Unimodular Stochastic Programs](#),” 2013. *Mathematical Programming Series A* volume 138, pp. 1-13.
- J25. Sandikci, B.<sup>†</sup>, N. Kong<sup>†</sup>, and **A. J. Schaefer**, “[A Hierarchy of Bounds for Stochastic Mixed-Integer Programs](#),” 2013. *Mathematical Programming Series A* volume 138, pp. 253-272.
- J26. Trapp, A. C., O. A. Prokopyev, and **A. J. Schaefer**, “[On a Level-Set Characterization of the Integer Programming Value Function and its Application to Stochastic Programming](#),” 2013. *Operations Research* volume 61, number 2, pp. 498-511.
- J27. Özaltın, O.<sup>†</sup>, O. A. Prokopyev, and **A. J. Schaefer**, “[Two-stage Quadratic Integer Programs with Stochastic Right-hand Sides](#),” 2012. *Mathematical Programming Series A* volume 133, number 1, pp. 121-158. [Test Instances](#).
-

- J28. Demirci, M. C.<sup>†</sup>, **A. J. Schaefer**, H. E. Romeijn, and M. S. Roberts, “[An Exact Method for Balancing Efficiency and Equity in the Liver Allocation Hierarchy](#),” 2012. *INFORMS Journal on Computing* volume 24, number 2, pp. 260-275.
- J29. Özaltın, O.<sup>†</sup>, O. A. Prokopyev, **A. J. Schaefer**, and M. S. Roberts, “[Optimizing the Societal Benefits of the Annual Influenza Vaccine: A Stochastic Programming Approach](#),” 2011. *Operations Research* volume 59, number 5, pp. 1131-1143.
- J30. Batun, S.<sup>†</sup>, B. T. Denton, T. R. Huschka, and **A. J. Schaefer**, “[The Benefit of Pooling Operating Rooms under Uncertainty](#),” 2011. *INFORMS Journal on Computing* volume 23, number 2, pp. 220-237.
- J31. Shah, N. D., B. T. Denton, M. Kurt<sup>†</sup>, **A. J. Schaefer**, S. A. Smith, and V. M. Montori, “[Comparative Effectiveness of Guidelines for the Management of Hyperlipidemia and Hypertension for Type 2 Diabetes Patients](#),” 2011. *PLoS ONE* volume 6, number 1 e16170.
- J32. Rajgopal, J., Z. Wang<sup>†</sup>, **A. J. Schaefer**, and O. Prokopyev, “[Integrated Design and Operation of Remnant Inventory Supply Chains under Uncertainty](#),” 2011. *European Journal of Operational Research* volume 214, pp. 358-364.
- J33. Kurt, M.<sup>†</sup>, B. Denton, **A. J. Schaefer**, N. Shah, and S. Smith, “[The Structure of Optimal Statin Initiation Policies for Patients with Type 2 Diabetes](#),” 2011. *IIE Transactions on Healthcare Systems Engineering* volume 1, number 1, pp. 49-65.
- J34. Özaltın, O.<sup>†</sup>, B. K. Hunsaker, and **A. J. Schaefer**, “[Predicting the Solution Time of Branch-and-Bound Algorithms for Mixed-Integer Programs](#),” 2011. *INFORMS Journal on Computing* volume 23, number 3, pp. 392-403. [Electronic Companion](#).
- J35. Kong, N.<sup>†</sup>, **A. J. Schaefer**, B. K. Hunsaker, and M. S. Roberts, “[Maximizing the Efficiency of the U.S. Liver Allocation System through Region Design](#),” 2010. *Management Science* volume 56, number 12, pp. 2111-2122.
- J36. Trukhanov, S., L. Ntaimo, and **A. J. Schaefer**, “[On Adaptive Multicut Aggregation for Two-Stage Stochastic Linear Programs with Recourse](#),” 2010. *European Journal of Operational Research* volume 206, number 2, pp.395-406.
- J37. Özaltın, O.<sup>†</sup>, O. A. Prokopyev, and **A. J. Schaefer**, “[The Bilevel Knapsack Problem with Stochastic Right-hand Sides](#),” 2010. *Operations Research Letters* volume 38, number 4, pp. 328-333.
- J38. Erkin, Z. E., M. D. Bailey, L. M. Maillart, **A. J. Schaefer**, and M. S. Roberts, “[Eliciting Patients' Revealed Preferences: An Inverse MDP Approach](#),” 2010. *Decision Analysis* volume 7, number 4, pp. 358-365.
- J39. Alagoz, O.<sup>†</sup>, H. Hsu, **A. J. Schaefer**, and M. S. Roberts, “[Markov Decision Processes: A Tool for Sequential Decision Making under Uncertainty](#),” 2010. *Medical Decision Making* volume 30, number 4, pp. 474-483.
- J40. **Schaefer, A. J.**, “[Inverse Integer Programming](#),” 2009. *Optimization Letters* volume 3, number 4, pp. 483-489.

- J41. Taskin, Z. C., J. C. Smith, S. Ahmed, and **A. J. Schaefer**, "[Cutting Plane Algorithms for Solving a Robust Edge Partition Problem](#)," 2009. *Discrete Optimization* volume 6, number 4, pp. 420-435.
- J42. Rajgopal, J., Z. Wang<sup>†</sup>, **A. J. Schaefer**, and O. Prokopyev, "[Effective Management Policies for Remnant Inventory Supply Chains](#)," 2009. *IIE Transactions* volume 41, number 5, pp. 437-447.
- J43. Braithwaite, R. S., M. S. Roberts, C. C. Chang, M. Goetz, C. Gilbert, M. Rodriguez, S. Shechter<sup>†</sup>, **A. J. Schaefer**, K. Nucifora, R. Koppenhaver<sup>†</sup>, and A. Justice, "[The Influence of Alternative Thresholds for Initiating HIV Treatment on Life Expectancy and Quality-adjusted Life Expectancy: A Decision Model](#)," 2008. *Annals of Internal Medicine* volume 148, number 3, pp. 178-185.
- J44. Shechter, S. M.<sup>†</sup>, M. D. Bailey, **A. J. Schaefer**, and M. S. Roberts, "[The Optimal Time to Initiate HIV Therapy under Ordered Health States](#)," 2008. *Operations Research* volume 56, number 1, pp. 20-33. [Electronic Companion](#).
- J45. Sandikci, B.<sup>†</sup>, L. M. Maillart, **A. J. Schaefer**, O. Alagoz<sup>†</sup>, and M. S. Roberts, "[Estimating the Patient's Price of Privacy in Liver Transplantation](#)," 2008. *Operations Research* volume 56, number 6, pp.1393-1410.
- J46. Stahl, J. E., J. E. Kreke<sup>†</sup>, F. Abdulmalek, **A. J. Schaefer**, and J. Vacanti "[The Effect of Cold-Ischemia Time on Primary Nonfunction, Patient and Graft Survival in Liver Transplantation: A Systematic Review](#)," 2008. *PLoS ONE* volume 3 number 6: e2468.
- J47. Kreke, J. E.<sup>†</sup>, M. D. Bailey, **A. J. Schaefer**, M. S. Roberts, and D. C. Angus, "[Modeling Hospital Discharge Policies for Patients with Pneumonia-Related Sepsis](#)," 2008. *IIE Transactions* volume 40, number 9, pp. 853-860.
- J48. Shechter, S. M.<sup>†</sup>, M. D. Bailey, and **A. J. Schaefer**, "[A Modeling Framework for Replacing Medical Therapies](#)," 2008. *IIE Transactions* volume 40, number 9, pp. 861-869.
- J49. Shechter, S. M.<sup>†</sup>, M. D. Bailey, and **A. J. Schaefer**, "[Replacing Nonidentical Components to Extend System Life](#)," 2008. *Naval Research Logistics* volume 55, number 7, pp. 700-703.
- J50. Alagoz, O.<sup>†</sup>, L. M. Maillart, **A. J. Schaefer**, and M. S. Roberts, "[Determining the Acceptance of Cadaveric Livers Using an Implicit Model of the Waiting List](#)," 2007. *Operations Research* volume 55, number 1, pp. 24-36. [Electronic Companion](#).
- J51. Braithwaite, R. S., S. M. Shechter<sup>†</sup>, C.-C. Chang, **A. J. Schaefer**, and M. S. Roberts, "[Estimating the Rate of Accumulating Drug Resistance Mutations in the HIV Genome](#)," 2007. *Value in Health* volume 10, number 3, pp 204-213.
- J52. Braithwaite R. S., J. Conigliaro, M. S. Roberts, S. M. Shechter<sup>†</sup>, **A. J. Schaefer**, K. McGinnis, M. Rodriguez, L. Rabeneck, K. Bryant, and A. C. Justice, "[Estimating the Impact of Alcohol Consumption on Survival for HIV+ Individuals](#)," 2007. *AIDS Care* volume 19, number 4, pp. 459-466.

- J53. Alagoz, O.<sup>†</sup>, L. M. Maillart, **A. J. Schaefer**, and M. S. Roberts, “[Choosing among Living-Donor and Cadaveric Livers](#),” 2007. *Management Science* volume 53, number 11, pp. 1702-1715.
- J54. Saka, G.<sup>†</sup>, J. E. Kreke<sup>†</sup>, **A. J. Schaefer**, C.-C. Chang, M. S. Roberts, and D. C. Angus, “[Use of Dynamic Microsimulation to Predict Disease Progression in Patients with Pneumonia-related Sepsis](#),” 2007. *Critical Care* 11:R65.
- J55. Kong, N.<sup>†</sup> and **A. J. Schaefer**, “[A Factor  \$\frac{1}{2}\$  Approximation Algorithm for Two-Stage Stochastic Matching Problems](#),” 2006. *European Journal of Operational Research* volume 172, pp. 740-746.
- J56. Bailey, M. D., S. M. Shechter<sup>†</sup>, and **A. J. Schaefer**, “[SPAR: Stochastic Programming with Adversarial Recourse](#),” 2006. *Operations Research Letters* volume 34, number 3 pp. 307-315.
- J57. **Schaefer, A. J.** and G. L. Nemhauser, “[Improving Airline Operational Performance through Schedule Perturbation](#),” 2006. *Annals of Operations Research* volume 144, pp. 3-16.
- J58. Shechter, S. M.<sup>†</sup>, **A. J. Schaefer**, R. S. Braithwaite and M. S. Roberts, “[Increasing the Efficiency of Monte Carlo Cohort Simulations with Variance Reduction Techniques](#),” 2006. *Medical Decision Making* volume 26, number 5, pp. 550-553.
- J59. Kong, N.<sup>†</sup>, **A. J. Schaefer**, and B. K. Hunsaker, “[Two-Stage Integer Programs with Stochastic Right-Hand Sides – A Superadditive Dual Approach](#),” 2006. *Mathematical Programming Series B* volume 108, pp. 275-296.
- J60. Braithwaite R. S., S. M. Shechter<sup>†</sup>, M. S. Roberts, **A. J. Schaefer**, D. R. Bangsberg, P. R. Harrigan, and A. C. Justice, “[Explaining Variability in the Relationship between Antiretroviral Adherence and HIV Accumulation](#),” 2006. *Journal of Antimicrobial Chemotherapy* volume 58, pp. 1036-1043.
- J61. Shechter, S. M.<sup>†</sup>, C. L. Bryce, O. Alagoz<sup>†</sup>, J. E. Kreke<sup>†</sup>, J. E. Stahl, **A. J. Schaefer**, D. C. Angus, and M. S. Roberts, “[A Clinically Based Discrete Event Simulation of End-Stage Liver Disease and the Organ Allocation Process](#),” 2005. *Medical Decision Making* volume 25, number 2, pp. 199-209.
- J62. Stahl J.E., N. Kong<sup>†</sup>, S. M. Shechter<sup>†</sup>, **A. J. Schaefer**, and M. S. Roberts, “[A Methodological Framework for Optimally Reorganizing Liver Transplant Regions](#),” 2005. *Medical Decision Making* volume 25, number 1, pp.35-46.
- J63. **Schaefer, A. J.**, E. L. Johnson, A. J. Kleywegt, and G. L. Nemhauser, “[Airline Crew Scheduling under Uncertainty](#),” 2005. *Transportation Science* volume 39, number 3, pp. 340-348.
- J64. Alagoz, O.<sup>†</sup>, C. L. Bryce, S. M. Shechter<sup>†</sup>, **A. J. Schaefer**, C.-C. H. Chang, D. C. Angus, and M. S. Roberts, “[Incorporating Biological Natural History in Simulation Models: Empiric Estimates of the Progression of End-Stage Liver Disease](#),” 2005. *Medical Decision Making* volume 25, pp. 620-632.



- J65. Smith, J. C., **A. J. Schaefer**, and J. Yen, “[A Stochastic Integer Programming Approach to Solving a Synchronous Optical Network Design Problem](#),” 2004. *Networks* volume 44, number 1, pp. 12-26.
- J66. Schaefer, L. A. and **A. J. Schaefer**, “[Locating Hybrid Fuel Cell-Turbine Power Generation Units Under Uncertainty](#),” 2004. *Annals of Operations Research* volume 132, pp. 301-332.
- J67. Alagoz, O.<sup>†</sup>, L. M. Maillart, **A. J. Schaefer**, and M. S. Roberts, “[The Optimal Timing of Living-Donor Liver Transplantation](#),” 2004. *Management Science* volume 50, number 10, pp. 1420-1430.
- J68. Kreke, J. E.<sup>†</sup>, **A. J. Schaefer**, and M. S. Roberts, “[Simulation and Critical Care Modeling](#),” 2004. *Current Opinion in Critical Care* volume 10, number 5, pp. 395-398.
- J69. Rosenberger, J. M., **A. J. Schaefer**, D. Goldsman, E. L. Johnson, A. J. Kleywegt, and G. L. Nemhauser, “[A Stochastic Model of Airline Operations](#),” 2002. *Transportation Science* volume 36, number 4, pp. 357-377.

### Chapters in Edited Books

- B1 . **Schaefer, A. J.**, M. D. Bailey, S. M. Shechter<sup>†</sup>, and M. S. Roberts, “Modeling Medical Treatment using Markov Decision Processes,” 2004. In *Handbook of Operations Research/Management Science Applications in Health Care*, Kluwer Academic Publishers, M. Brandeau, F. Sainfort, and W. Pierskalla, eds, pp. 597-616.
- B2 . Alagoz, O.<sup>†</sup>, **Schaefer, A. J.**, and M. S. Roberts, “Optimization in Organ Allocation,” 2009. In *Handbook of Optimization in Medicine*, P. Pardalos and E. Romeijn, Editors. Kluwer Academic Publishers.

### Graduate Students Supervised (16 PhD students graduated, 6 PhD students in progress):

**Oğuzhan Alagoz**, August 2001-July 2004.

- Dissertation Title: *Optimal Policies for the Acceptance of Living- and Cadaveric-Donor Livers*.
- Recipient of an Honorable Mention for the 2005 *George B. Dantzig Dissertation Award* given by INFORMS for the “best dissertation in any area of operations research.”
- Recipient of a CAREER Award from the National Science Foundation.
- Current Position: Professor, Department of Industrial and Systems Engineering, University of Wisconsin-Madison.

**Nan Kong**, August 2000-December 2005.

- Dissertation Title: *Optimizing the Efficiency of the United States Organ Allocation System through Region Reorganization*.
- Recipient of an Honorable Mention for the 2006 *George B. Dantzig Dissertation Award* given by INFORMS for the “best dissertation in any area of operations research.”
- Recipient of the 2007 Pritsker Doctoral Dissertation Award from IIE.

- Current Position: Associate Professor, Weldon School of Biomedical Engineering, Purdue University.

**Zhouyan Wang**, August 2001-April 2006. (Co-advised with J. Rajgopal.)

- Dissertation Title: *Integrated Supply Chain Design and Management for Remnant Inventory Systems*.
- Current Position: Industry.

**Steven Shechter**, January 2002-July 2006.

- Dissertation Title: *Optimal Scheduling of Highly Active Antiretroviral Therapies for H.I.V. Patients*.
- Recipient of an AHRQ Fellowship.
- Recipient of the Bonder Prize for Health Care given by INFORMS.
- Recipient of an Honorable Mention from the INFORMS Decision Analysis Society 2006 student paper competition.
- Current Position: Associate Professor, Sauder School of Business, University of British Columbia.

**Jennifer Kreke**, August 2001-July 2007. (Co-advised with Matt Bailey.)

- Dissertation Title: *Optimal Treatment of Sepsis Patients*.
- Recipient of an AT&T graduate fellowship (one of only two given nationally).
- Winner of a Best Paper award from *IIE Transactions* for Kreke et al. 2008.
- Current Employer: Industry.

**Mehmet Can Demirci**, August 2003-May 2008.

- Dissertation Title: *Designing the Liver Allocation Hierarchy: Incorporating Equity and Uncertainty*.
- Current Employer: Industry.

**Burhaneddin Sandikci**, June 2004-June 2008. (Co-advised with Lisa Maillart.)

- Dissertation Title: *Estimating the Price of Privacy in Liver Transplantation*.
- Recipient of the Bonder Prize for Health Care given by INFORMS.
- Received an Honorable Mention from the INFORMS Decision Analysis Society student paper competition in 2007.
- Received third place in the 2009 Pritsker Doctoral Dissertation Award from IIE.
- Current Position: Associate Professor of Operations Management, Booth School of Business, University of Chicago.

**Görkem Saka**, August 2003-July 2010. (Co-advised with Lisa Maillart.)

- Dissertation Title: *Increasing and Assessing the Impact of Patient Choice in Liver Transplantation*.
- Current Employer: Industry.

**Osman Özaltın**, August 2007-July 2011. (Co-advised with Oleg Prokopyev.)

- Dissertation topic: *Flu Shot Design under Uncertainty*.



- Winner of the 2013 Pritsker Doctoral Dissertation Award from IIE.
- Current Position, Assistant Professor, Department of Industrial Engineering, North Carolina State University.

**Sakine Batun**, August 2006-November 2011.

- Dissertation Title: *Scheduling Multiple Operating Rooms under Uncertainty*.
- Winner of the 2010 IERC Student Poster Competition.
- Current Position: Assistant Professor of Industrial Engineering, Middle Eastern Technical University, Ankara, Turkey.

**Murat Kurt**, August 2005-November 2012.

- Dissertation Title: *Dynamic Decision Models for Managing the Major Complications of Diabetes*.
- Finalist in the 2009 INFORMS “Doing Good with Good OR” competition.
- Recipient of the Bonder Prize for Health Care given by INFORMS.
- Winner of the 2014 Pritsker Doctoral Dissertation Award from IIE.
- Current Position: Industry.

**Amin Khademi**, August 2008-July 2013 (Co-advised with Denis Saure).

- Dissertation title: *Epidemic Control under Resource Constraints: HIV in Sub-Saharan Africa*.
- Recipient of the Bonder Prize for Health Care given by INFORMS.
- Recipient of a CAREER Award from the National Science Foundation.
- Current Position: Assistant Professor of Industrial Engineering, Clemson University.

**Sepehr Nemati**, January 2008-April 2014.

- Dissertation title: *Improving Healthcare Delivery: Liver Health Updating and Surgical Patient Routing*
- Current Position: Instructor, Department of Industrial and Systems Engineering, Rutgers University.

**Amin Dehghanian**, January 2009-July 2015.

- Dissertation title: *Integer Programming Approaches to Stochastic Games Arising in Paired Kidney Exchanges and Industrial Organization*
- Current Position: Assistant Professor of Industrial Engineering, Amirkabir University, Iran.

**Gabriel Zenarosa**, August 2009-July 2016. (Co-advised with Oleg Prokopyev).

- Dissertation title: *Integrated Proactive and Reactive Decision-Making in Surgery Scheduling*
- Recipient of a CTSA grant from the NIH
- Current Position: Assistant Professor, University of North Carolina, Charlotte.

**M. Yasin Ulukus**, January 2012-July 2017

- Dissertation title: *Data-Driven Management of Intensive Care Units*
- Current Position: Assistant Professor of Industrial Engineering, Istanbul Sehir University, Turkey.

**Ruichen Sun**, August 2012-January 2019. (Co-advised with Lisa Maillart).

- Dissertation title: *Optimal Decision Making in the Processing and Dispensing of Donor Human Milk*
- Current position: Industry.

**Onur Tavaslioglu**, August 2013-Present. (Co-advised with Oleg Prokopyev).

**Tayo Ajayi**, August 2015-Present

**David Mildebrath**, August 2016-Present

- Recipient of an NDSEG fellowship.

**Seth Brown**, August 2017-Present

**Eric Antley**, August 2017-Present

**Post-Doctoral Fellows Supervised:**

**R. Aykut Arapoglu**, January 2001-July 2001. (Co-advised with J. Rajgopal.) Current position: Assistant Professor, Eskisehir Osmangazi University, Turkey.

**Atul Bhandari**, September 2006-April 2008. Current position: Industry.

**David Kaufman**, September 2006-May 2008. Current position: Assistant Professor at the University of Michigan-Dearborn.

**Oleg Shylo**, September 2009-August 2011. Current position: Assistant Professor of Industrial Engineering, University of Tennessee-Knoxville.

**Theo Bountourelis**, September 2009-August 2011. Current position: Industry.

**Winston Yang**, August 2009-July 2011. Current position: Industry.

**Mustafa Kilinc**, April 2011-August 2013 (Co-advised with Juan Pablo Vielma.) Current position: Industry.

**Taewoo Lee**, August 2015-December 2016. Current position: Assistant Professor of Industrial Engineering, University of Houston in January 2016.

**Silviya Valeva**, July 2017-Present.

**Saumya Sinha**, September 2018-Present.

**Honors and Awards:**

- Best Paper Award, *IIE Transactions on Operations Engineering* for Eckman et al. (2016).
- Outstanding Young Engineering Alumni Award, Rice University, 2013.
- Meritorious Referee, *Operations Research*, 2013.
- Outstanding Young IE – Education Award, Institute of Industrial Engineers (IIE), 2007.
- CAREER Award, National Science Foundation, 2006.
- University of Pittsburgh School of Engineering Board of Visitors Faculty Award, 2006.
- Best Paper Award, Service Science Section of INFORMS, for Kurt et al. (2010).
- Second Prize, University of Pittsburgh School of Engineering Diversity Award, 2003.
- Honorable Mention, Best Paper Award, INFORMS Junior Faculty Interest Group, 2003 for Smith, Schaefer and Yen (2004).
- *IIE Transactions* 2009 Best Applied Paper Prize in Operations Engineering and Analysis for Kreke et al. (2008).
- Faculty Honor Roll for Teaching Excellence, University of Pittsburgh, 2002.
- John H. Morris Graduate Fellowship, School of Industrial and Systems Engineering, Georgia Tech.
- INFORMS Doctoral Colloquium, 1999.
- President's Fellowship, Georgia Institute of Technology, 1995-1999.
- President's Honor Roll for five of eight semesters, Rice University, 1990-1994.
- Board of Governor's Scholarship, Rice University, 1990.
- National Merit Scholar, 1990-1994.

**Peer-reviewed Grants:**

**A. J. Schaefer (PI)**

“Collaborative Research: Performance Incentives for Organ Transplantation Centers”  
National Science Foundation  
\$245,679  
September 2018-August 2021.

**A. J. Schaefer (PI)**

“Collaborative Research: Physiologically Based Optimization of ICU Management”  
National Science Foundation  
\$216,120  
September 2016-August 2019.

**L. M. Maillart (PI) and A. J. Schaefer (Co-PI)**

“Optimal Management of Donor Milk Banks”  
National Science Foundation  
\$300,000  
September 2015-August 2018.

**A.J. Schaefer** (PI) and O. A. Prokopyev (Co-PI)  
“Scenario Tree Decomposition: A Novel Approach to Solving Multistage Stochastic Mixed-Integer Programs”  
National Science Foundation  
\$250,000  
August 2014 – July 2018.

O. A. Prokopyev (PI) and **A. J. Schaefer** (Co-PI)  
“Integrating Proactive and Reactive Operating Room Management”  
National Science Foundation  
\$350,000  
October 2013-September 2017.

**A. J. Schaefer** (PI) and M. S. Roberts (Co-PI)  
“Collaborative Research: The Optimal Timing of Kidney Exchanges: A Markov Game Approach”  
National Science Foundation  
\$270,000  
May 2011- April 2014.

R. Squires (PI), **A. J Schaefer** (Co-I)  
“A Multi-Center Group to Study Acute Liver Failure in Children”  
National Institutes of Health  
\$288,186 (Schaefer portion).  
October 2010-September 2015.

M. Roberts (PI), **A. J. Schaefer** (Co-I)  
“The Optimal Timing of Transplantation in Pediatric Acute Liver Failure,” R21.  
National Institute of Diabetes and Digestive and Kidney Diseases (one of the National Institutes of Health).  
\$87,369 (Schaefer portion).  
July 2009 - June 2011.

**A. J. Schaefer (PI)**, M. Roberts, O. Prokopyev, B. Lee, and D. Burke.  
“Optimizing Flu Shot Design under Uncertainty”  
National Science Foundation  
\$326,826.  
September 2008- August 2011.

**Schaefer, A. J.** (PI).  
“Collaborative Research: Optimization of the Design and Operation of Surgical Delivery Systems.”  
National Science Foundation.  
\$120,499.  
September 2006-August 2009.

Braithwaite, R. S. (PI, New York University) and **A. J. Schaefer** (Co-I).  
“A Computer Simulation of the Sub-Saharan HIV Pandemic that can Estimate Benefit and Value from Alcohol Interventions.”  
National Institute on Alcohol Abuse and Alcoholism (one of the National Institutes of Health).  
\$76,476 (Schaefer portion).  
September 2007-August 2012.

**Schaefer, A. J.** (PI).  
“CAREER: Next-Generation Research and Education in Therapeutic Optimization.”  
National Science Foundation Grant DMI-0546960.  
\$400,000 + \$6,000 REU supplement.  
May 2006-April 2012.

**Schaefer, A. J.** (PI), B. K. Hunsaker and M. S. Roberts.  
“Optimizing the Regional Distribution of Organ Procurement Organizations.”  
National Science Foundation Grant DMI-0355433.  
\$299,999 + \$12,000 REU supplement.  
July 2004-June 2008.

Roberts, M. S. (PI), **A. J. Schaefer** (Co-I) and M. D. Bailey.  
“Using MDPs to Optimize Living Donor Liver Transplants.”  
National Library of Medicine, National Institutes of Health.  
\$387,699.  
July 2004-December 2007.

**Schaefer, A. J.** (PI) and M. S. Roberts.  
“Collaborative Research: Modeling the Patient’s Perspective on Organ Acceptance.”  
National Science Foundation Grant DMI-0223084.  
\$126,200 + \$32,000 RET and REU supplements.  
September 2002-February 2005.

**Schaefer, A. J.** (PI) and J. Rajgopal.  
“Integrated Supply Chain Design and Management for Remnant Inventory Systems.”  
National Science Foundation Grant DMI-0217190.  
\$328,307 + \$38,000 RET and REU supplements.  
September 2002-August 2006.

**Non-Peer Reviewed Grants:**

**A. J. Schaefer (PI)** “Optimizing Milk Bank Operations”  
W. K. Kellogg Foundation  
\$214,559  
September 2018-March 2020.

**A. J. Schaefer (PI for Pitt)**  
“Quantifying the Economic Impact of Suboptimal Breastfeeding”

W. K. Kellogg Foundation  
\$113,310.  
June 2013-December 2014.

**A. J. Schaefer (PI)** and O. Prokopyev (Co-PI)  
“Veterans Engineering Resource Center”  
Department of Veterans Affairs  
\$240,000.  
October 2012-May 2013.

**A. J. Schaefer (PI)** and J. Rajgopal (Co-PI)  
“Veterans Engineering Resource Center”  
Department of Veterans Affairs  
\$770,700.  
October 2011-September 2012.

**A. J. Schaefer (PI)** and J. Rajgopal (Co-PI)  
“Veterans Engineering Resource Center”  
Department of Veterans Affairs  
\$1,799,999.  
September 2009-October 2011.

**A. J. Schaefer** (subaccount).  
“MIDAS: Models of Infectious Disease Agent Study.”  
National Institutes of Health  
\$52,315  
April 2007-December 2007.

**A. J. Schaefer** (subaccount).  
“Sepsis.”  
National Institutes of Health  
\$84,932  
September 2006-2010.

Grossmann, I. (Lead PI), **A. J. Schaefer** (PI for Pitt), J. Hooker, L. Biegler, and J. Linderoth.  
“Computational Models and Algorithms for Enterprise-wide Optimization of Process Industries.”  
Pennsylvania Infrastructure Technology Alliance (PITA).  
\$489,247.  
July 2005-June 2007.

Roberts, M. S. (PI) and **A.J. Schaefer** (Co-PI).  
“The Application of Management Science and Simulation to Health Care System Operation and Planning.”  
Jewish Healthcare Foundation.

Pittsburgh, PA.  
\$37,259.  
October 2003-December 2004.

**Schaefer, A.J.** (subaccount).  
“Tailoring HIV Therapy for Alcohol-Using Populations.”  
National Institutes of Health.  
\$55,078.  
September 2003-2006.

**Schaefer, A.J.** (subaccount).  
“Modeling the Progression of Severe Sepsis Patients in the GenIMS Cohort.”  
National Institutes of Health and Glaxo-Smith Kline  
\$120,260.  
September 2002-November 2005.

**A. J. Schaefer** (PI).  
“Stochastic Integer Programming: A Superadditive Dual Approach.”  
University of Pittsburgh Central Research Development Fund  
\$16,000  
July 2002 - June 2004.

**Schaefer, A.J.** (subaccount).  
“Modeling the Progression of End-Stage Liver Disease.”  
University of Pittsburgh School of Medicine  
\$89,656  
January 2001- April 2003.

**Invited Seminars/Colloquia:**

1. Penn State University, State College, Pennsylvania, March 2001.
2. University of Arizona, Tucson, Arizona, October 2001.
3. Stevens Institute of Technology, Hoboken, New Jersey, November 2001.
4. Duquesne University, Pittsburgh, Pennsylvania, January 2002.
5. Case Western Reserve University, Cleveland, Ohio, September 2003.
6. University of Florida, February 2005.
7. University of Pittsburgh, Health Services Research Seminar Series, Pittsburgh, Pennsylvania, May 2005.
8. Case Western Reserve University, Cleveland, Ohio, September 2005.
9. Arizona State University, Tempe, Arizona, November 2005.
10. INFORMS annual meeting, San Francisco, California, “Therapeutic Optimization via Markov Decision Processes,” invited tutorial, November 2005.
11. University of Auckland, Auckland, New Zealand, December 2005.
12. Virginia Tech, Blacksburg, Virginia, January 2006.
13. University of Toronto, Toronto, Canada, February 2006.
14. Bilkent University, Ankara, Turkey, March 2006.
15. Middle East Technical University, Ankara, Turkey, March 2006.



16. Boğazici University, Istanbul Turkey, March 2006.
17. Texas A&M University, College Station, Texas, April 2006.
18. Mayo Clinic, Rochester, Minnesota, May 2006.
19. National Institute of Biomedical Imaging and Bioengineering, National Institutes of Health, Bethesda, Maryland, October 2006.
20. North Carolina State University, Raleigh, North Carolina, November 2006 (two seminars).
21. Carnegie-Mellon University, Pittsburgh, Pennsylvania, December 2006.
22. RAND, Pittsburgh, Pennsylvania, July 2007.
23. University of Wisconsin-Madison, Madison, Wisconsin, September 2007.
24. George Mason University, Alexandria, Virginia, April 2008.
25. INSEAD, Fontainebleau, France, June 2008.
26. Northwestern University, Evanston, Illinois, November 2008.
27. Stanford University, Stanford, California, February 2009.
28. Georgia Tech, Atlanta, Georgia, April 2009.
29. University of California-Berkeley, Berkeley, California, May 2009.
30. University of British Columbia, Vancouver, British Columbia, September 2009.
31. RAND/ Department of Health Policy and Management, University of Pittsburgh, Pittsburgh, Pennsylvania, November 2009.
32. Lehigh University, Bethlehem, Pennsylvania, November 2009.
33. University of Houston, Houston, Texas, November 2009.
34. Rice University, Houston, Texas, November 2009.
35. Purdue University, West Lafayette, Indiana, September 2010.
36. University of Illinois, Urbana-Champaign, Illinois, October 2010.
37. Penn State University, State College, Pennsylvania, November 2010.
38. London Business School, London, United Kingdom, November 2010.
39. University College London, London, United Kingdom, March 2011.
40. University of Michigan, Ann Arbor, MI, March 2011.
41. Ohio State University, Columbus, Ohio, May 2011.
42. Southampton University, Southampton, United Kingdom, November 2011.
43. Imperial College London, London, United Kingdom, March 2012.
44. Cambridge University, Cambridge, United Kingdom, March 2012.
45. London Business School, London, United Kingdom, March 2012.
46. University College London, London, United Kingdom, May 2012.
47. Oxford University, Oxford, United Kingdom, May 2012.
48. London Business School, London, United Kingdom, May 2012.
49. Boğazici University, Istanbul, Turkey, November 2012.
50. Koç University, Istanbul, Turkey, November 2012.
51. Sabancı University, Istanbul, Turkey, November 2012.
52. Bilkent University, Ankara, Turkey, November 2012.
53. Middle East Technical University, Ankara, Turkey, November 2012.
54. Yale University, New Haven, CT, January 2013.
55. McGill University, Montreal, Canada, February 2013.
56. Carnegie-Mellon University, Pittsburgh, PA, March 2013.
57. National University of Singapore, Singapore, March 2013.
58. University at Buffalo, Buffalo, NY, April 2013.

59. University of Toronto, Toronto, ON, Canada (keynote address), June 2013.
60. University of Texas, Austin, TX, September 2013.
61. Rice University, Houston, TX, November 2013.
62. U.S. Naval Academy, Annapolis, MD, April 2014.
63. University of Minnesota, Minneapolis, MN, April 2015.
64. University of Houston, Houston, TX, September 2015.
65. University of Western Ontario, London, ON, September 2015.
66. Rice University, Houston, TX, October 2015.
67. University of Maryland, College Park, MD, December 2015.
68. University of Texas, Houston, TX, December 2015.
69. Texas A&M University, College Station, TX, February 2016.
70. University of Southern California, Los Angeles, CA, April 2016.
71. University of Wisconsin-Madison School of Medicine, May 2016.
72. Rice University Department of Economics, Houston, TX, November 2016.
73. Georgia Tech School of ISyE, Atlanta, GA, September 2018.

**Courses Taught at Rice University:**

- CAAM 471/571, *Linear and Integer Programming*, Spring 2016.
- MICO 601, *Critical Thinking and Decision Making*, Spring 2016.
- CAAM 378, *Introduction to Operations Research and Optimization*, Fall 2015, 2016, 2017, 2018.

**Courses Taught at the University of Pittsburgh:** (starred courses developed by me)

- IE 3088\*, *Integer Programming*, Fall 2002, 2004, 2009, 2013.
- IE 3186\*, *Approximate Dynamic Programming*, Spring 2009.
- IE 1074\*, *Modeling in Sports and Games*, Spring 2015.
- IE 3093\*, *Stochastic Programming*, Fall 2001, Spring 2004, Fall 2005, 2007, 2010, 2013.
- IE 3051\*, *Computational Optimization*, Spring 2002, Fall 2003, 2006, 2008, 2012, 2014.
- IE 3098\*, *Advanced Markov Decision Processes*, Spring 2007.
- IE 3077\*, *Therapeutic Optimization*, Spring 2006, 2013.
- IE 2078, *Mathematical Modeling Techniques for Complex Biological Systems*, Fall 2005.
- IE 1084\*, *Operations Research in the Service Sector*, Fall 2004.
- IE 1079/2079\*, *Logistics and Supply Chain Management*, Spring 2001, Spring 2003.
- IE 1083/2087, *Simulation with ARENA*, Fall 2000, 2001.

**Courses Taught at other Institutions:**

- Management Analysis and Systems* (2/3 responsibility), Fall 2011, London Business School.
- ISyE 3231, *Deterministic Operations Research*, Spring 1999, Georgia Tech.

**Other Professional Appointments:**

- *Courtesy Appointment*, Department of Computer Science. Rice University, 2016-present.
- *Visiting Professor of Management Science and Operations*, London Business School, 2011-12.
- *Visiting Professor of Management Science and Innovation*, University College London, 2011-12.

- *Courtesy Appointment*, Department of Medicine, University of Pittsburgh, 2003-2015.
- *Courtesy Appointment*, Department of Bioengineering, University of Pittsburgh, 2005-2015.
- *Associate Faculty Member*, CRISMA Center, University of Pittsburgh School of Medicine, 2013-2015.
- *Graduate Research Assistant*, School of Industrial and Systems Engineering, Georgia Tech, 1995-2000.
- *Courtesy Appointment*, Clinical and Translational Science, University of Pittsburgh, 2008-2015.
- *Summer Intern*, Research and Development Department, United Airlines, Elk Grove Village, Illinois. May-September, 1996.
- *Applications Consultant*, Chesapeake Decision Sciences, Houston, Texas. 1994-1995.
- *Graduate Fellow*, Central Intelligence Agency, Langley, Virginia. Summer 1993.
- *Junior Analyst*, *International Research Institute*, Newport News, Virginia. Summer 1992.

**Positions of Leadership in Professional Society Committees:**

- Program Co-Chair, 2006 INFORMS Annual Meeting, which was then the largest INFORMS conference ever.
- Cluster Chair, “Sports, Games and Recreational OR,” 2003 INFORMS annual meeting.
- Cluster Co-Chair, “Health Care Applications,” 2005 INFORMS annual meeting.
- Speaker at IIE Doctoral Colloquium, 2002 and 2005.
- Secretary, Health Care Applications Section, INFORMS, 2006.

**Conferences Organized:**

- Program Co-Chair, 2006 INFORMS Annual Meeting.
- Member of Program Committee, 2004 IERC.
- Member of Program Committee, 2007 Society for Medical Decision Making Annual Conference.
- Member of Organizing Committee, 2015 International Symposium on Mathematical Programming.
- Plenary and Keynotes Co-Chair, 2017 INFORMS Annual Meeting.
- Co-Program Chair, 2019 IISE Annual Conference.

**Journal Editorships or Journal Editorial Board Service:**

- Associate Editor, *IIE Transactions on Operations Engineering*, 2009-Present.
- Senior Editor, *Production and Operations Management*, 2009-Present.
- Associate Editor, *INFORMS Journal on Computing*, 2010-Present.
- Department Editor, *Computational Engineering, Focused Issue on Operations Engineering and Analytics*, *IIE Transactions*, 2013-Present.
- Associate Editor, *Operations Research*, 2015-Present.
- Associate Editor, *Management Science*, 2017-Present.

- Co- Editor for a volume of *Mathematical Programming volume B* on the 2015 International Symposium on Mathematical Programming.
- Co-Editor of *Annals of Operations Research*, Volume 132, 2004.
- Associate Editor, *IIE Transactions*, Special Issue on Homeland Security, 2005.
- Topical Editor, *Encyclopedia of Operations Research*, 2009-2011.
- Member of Editorial Board, *Medical Decision Making*, 2009-2012.
- Associate Editor, *IIE Transactions on Healthcare Systems Engineering*, 2010-14.
- Associate Editor, *Manufacturing and Service Operations Management*, 2011-12.

**Membership on National Advisory Committees:**

- United States Advisory Committee on Organ Transplantation, 2011- 2018.
- Simulated Allocation Models Improvement Subcommittee, which reports to the United States Scientific Registry of Transplant Recipients Technical Advisory Committee, 2011-Present.
- Committee Co-Chair, United States Advisory Committee on Organ Transplantation Kidney Paired Donation Workgroup.