

# CURRICULUM VITAE

Oguzhan Alagoz

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## CONTACT INFORMATION

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## ACADEMIC EMPLOYMENT

(2011-present) Associate Professor of Industrial and Systems Engineering, University of Wisconsin-Madison

(2008-present) Affiliate Associate Professor, Department of Population Health Sciences, UW-Madison

(2008- present) Director, UW-Institute for Clinical and Translational Research Simulation Center, UW-Madison

(2005-2011) Assistant Professor of Industrial and Systems Engineering, University of Wisconsin-Madison

(2004- 2005) Visiting Assistant Professor, Weatherhead School of Management, Case Western Reserve University

(2000- 2004) Teaching/Research Assistant University of Pittsburgh, Department of Industrial Engineering,

(1999- 2000) Teaching/Research Assistant, Middle East Technical University, Ankara, Turkey.

## EDUCATION

**Ph.D. in Industrial Engineering (2004)**, University of Pittsburgh, Pittsburgh, PA.

**M.S. in Industrial Engineering (2000)**, Middle East Technical University, Ankara, Turkey.

**B.S. in Industrial Engineering (1997)**, Bilkent University, Ankara, Turkey

## HONORS AND AWARDS

- NSF CAREER Award, 2009
- Institute of Industrial Engineers (IIE) Outstanding Young IE in Education Award, 2011
- INFORMS Junior Faculty Interest Group (JFIG) best paper competition, 2<sup>nd</sup> place, 2008
- INFORMS George B. Dantzig Dissertation Award, Honorable Mention, 2005
- INFORMS Service Science Section Best Paper Award, 2009
- Granted full financial support for the B.S. program of the Industrial Engineering Department of Bilkent University, Ankara, Turkey, 1993-1997
- Outstanding Research Assistant in the Department of Industrial Engineering, University of Pittsburgh (2004)
- Participant of the 2003 INFORMS Doctoral Colloquium, 2004 Institute for Industrial Engineers (IIE) Doctoral Colloquium, Young Researcher Roundtable, INFORMS Conference on O.R. Practice, 2006

- Supervised research of Jagpreet Chhatwal who won the 2008 Best Student Paper Award of the Decision Analysis Society of INFORMS, 2008 Best Student Paper Award of the Manufacturing and Service Operations Management Society of INFORMS, and INFORMS 2007 Best Poster Award
- Supervised Jagpreet Chhatwal's dissertation that received INFORMS George B. Dantzig Dissertation 2nd place Award, 2009
- Supervised research of Turgay Ayer who won the 2009 Lee B. Lusted student prize of the Society for Medical Decision Making (SMDM) Annual Meeting, 2011 Finalist for INFORMS Decision Analysis Society Student Paper Competition, winner of 2011 Doing Good with Good OR Student Competition, 2011 2dn best Student Paper Award of the Manufacturing and Service Operations Management Society of INFORMS.
- Paul Carbone Prize for Best Poster in Cancer Control during 2nd Annual UW Carbone Comprehensive Cancer Center (UWCCC) Research Retreat in 2008

## REFEREED JOURNAL PUBLICATIONS

### Published/Accepted

1. **O. Alagoz** and M. Azizoglu (2003) "Rescheduling of Identical Parallel Machines under Machine Eligibility Constraints," *European Journal of Operational Research*, 149(3), p. 523-532.
2. **O. Alagoz**, L. M. Maillart, A. J. Schaefer and M. S. Roberts (2004), "The Optimal Timing of Living-Donor Liver Transplantation," *Management Science*, 50(10), p.1420-1430.
3. S. M. Shechter, C. L. Bryce, **O. Alagoz**, J. E. Kreke, J. E. Stahl, A. J. Schaefer, D. C. Angus and M. S. Roberts (2005), "A Clinically Based Discrete-Event Simulation of End-Stage Liver Disease and the Organ Allocation Process," *Medical Decision Making*<sup>1</sup>, 25(2), p. 199-209.
4. M. Azizoglu and **O. Alagoz** (2005), "Parallel Machine Rescheduling with Machine Disruptions," *IIE Transactions*, 37(12), p.1113-1118.
5. **O. Alagoz**, C. L. Bryce, S.M. Shechter, A. J. Schaefer, C. C. Chang, D. C. Angus and M. S. Roberts (2005), "Incorporating Biological Natural History in Simulation Models: Empirical Estimates of the Progression of End-stage Liver Disease," *Medical Decision Making*<sup>1</sup>, 25(6), p. 620-632.
6. **O. Alagoz**, L. M. Maillart, A. J. Schaefer and M. S. Roberts (2007), "Determining the Acceptance of Cadaveric Livers Using an Implicit Model of the Waiting List," *Operations Research*, 55(1), p. 24-36.
7. **O. Alagoz**, L. M. Maillart, A. J. Schaefer and M. S. Roberts (2007), "Choosing among Living-Donor and Cadaveric Livers," *Management Science*, 53(11), p.1702-1715.
8. B. Sandikci, L. M. Maillart, A. J. Schaefer, **O. Alagoz**, and M. S. Roberts (2008), "Estimating the Patient's Price of Privacy in Liver Transplantation," *Operations Research*, 56(6), p.1393 -1410.
9. **O. Alagoz**, B. A. Norman and A. E. Smith (2008), "Determining Aisle Structures for Facility Designs Using a Hierarchy of Algorithms," *IIE Transactions*, 40(11), p.1019-1031.
10. E. S. Burnside, J. Davis, J. Chhatwal\*, **O. Alagoz**, M. J. Lindstrom, B. M. Geller, B. Littenberg, C. E. Kahn, K. A. Shaffer, and C. D. Page (2009), "Probabilistic Computer Model Developed from Clinical Data in the

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<sup>1</sup> 2009 SCI Impact Factor: 2.597, #4 among 23 in medical informatics, #12 among 69 in Health Services subjects

National Mammography Database Format to Classify Mammographic Findings," *Radiology*<sup>2</sup>, 251(3), p.663-672.

11. J. Chhatwal\*, **O. Alagoz**, M. J. Lindstrom, C. E. Kahn, K. A. Shaffer and E. S. Burnside (2009), "A Logistic Regression Model Based on the National Mammography Database Format to Aid Breast Cancer Diagnosis," *American Journal of Roentgenology*<sup>3</sup>, 192(4), p.1117-1127.  
- this paper was covered extensively in media (more than 70 websites and news sites as of April 9, 2009 including popular sites and newspapers such as news.yahoo.com, Los Angeles Mirror, United Press International [UPI], etc.), see for example [http://www.upi.com/Health\\_News/2009/04/06/Model-helps-diagnose-breast-cancer/UPI-47521239063375/](http://www.upi.com/Health_News/2009/04/06/Model-helps-diagnose-breast-cancer/UPI-47521239063375/)
12. J. Zhuang, V. Bier, and **O. Alagoz** (2010), "Modeling Secrecy and Deception in a Multiple-period Attacker-Defender Signaling Game," *European Journal of Operational Research*, 203(2), p.409-418.
13. T. Ayer\*, J. Chhatwal\*, **O. Alagoz**, E.S. Burnside, and C.E. Kahn (2010), "Informatics in Radiology: Comparison of Logistic Regression and Artificial Neural Network Models in Breast Cancer Risk Estimation," *Radiographics*<sup>4</sup>, 30(1), p.13-22.
14. T. Ayer\*, **O. Alagoz**, J. Chhatwal\*, J. Shavlik, E.S. Burnside, and C.E. Kahn (2010), "Breast Cancer Risk Estimation with Artificial Neural Networks Revisited: Discrimination and Calibration," *Cancer*<sup>5</sup>, 116(14), p.3310-3321.  
- winner of SMDM 2009 Lee B. Lusted Student Prize
15. S. M. Shechter, **O. Alagoz**, and M. S. Roberts (2010), "Irreversible Treatment Decisions under Consideration of the Research and Development Pipeline for New Therapies," *IIE Transactions*, 42(9), p.632-642.
16. T. Ayer\*, M. Ayvaci\*, Z.X. Liu\*, **O. Alagoz**, and E. S. Burnside (2010), "Computer-aided diagnostic models in breast cancer screening," *Imaging in Medicine*, 2(3), p.313-323.  
- invited paper
17. **O. Alagoz**, H. E. Hsu, M. S. Roberts, and A. J. Schaefer (2010), "Markov decision processes: A tool for sequential decision making under uncertainty," *Medical Decision Making*, 30(4), p.474-483.
18. J. Chhatwal\*, **O. Alagoz**, and E. S. Burnside (2010), "Optimal Policies for Biopsy Decision-Making Based on Mammography Findings and Demographic Factors," *Operations Research*, 58(6), p.1577-1591.  
- 2<sup>nd</sup> place award of 2008 INFORMS JFIG paper competition  
- winner of 2008 Best Student Paper Award of the Decision Analysis Society of INFORMS  
- winner of 2008 Best Student Paper Award of the Manufacturing and Service Operations Management Society of INFORMS  
- winner of INFORMS 2007 Annual Meeting Best Poster Award
19. F. S. Erenay\*, **O. Alagoz**, R. Banerjee, R. Cima (2011), "Estimating the Unknown Parameters of the Natural History of Metachronous Colorectal Cancer Using Discrete-Event Simulation," *Medical Decision Making*, 31(4), p. 611-625.

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<sup>2</sup> 2009 SCI Impact Factor: 6.341, #2 among 104 in medical imaging subject

<sup>3</sup> 2009 SCI Impact Factor: 2.951, #21 among 104 in medical imaging subject

<sup>4</sup> 2009 SCI Impact Factor: 2.747, #28 among 104 in medical imaging subject

<sup>5</sup> 2009 SCI Impact Factor: 5.418, #21 among 166 in oncology subject

20. J. Shi\*, **O. Alagoz**, F. S. Erenay\*, Q. Su (2011), "A Survey of Optimization Models on Cancer Chemotherapy Treatment Planning," *Annals of Operations Research* (In press), Published online: 31 March 2011, DOI: 10. 1007/s10479-011-0869-4.
21. T. Ayer\*, **O. Alagoz**, and N. K. Stout (2011), "A POMDP Approach to Personalize Mammography Screening Decisions," *Operations Research* (In press).
  - winner of INFORMS 2009 Annual Meeting Best Poster Award
  - finalist for INFORMS 2011 Decision Analysis Society Best Paper Competition
22. M. Ayvaci\*, **O. Alagoz**, and E. S. Burnside (2011), "Optimizing Breast Cancer Diagnosis under Resource Constraints," *Manufacturing and Service Operations Management* (In press).
23. M. Akan, **O. Alagoz**, B. Ata, F. S. Erenay\*, and A. Said (2009) (names are in alphabetical order), "A Broader View of Designing the Liver Allocation System," *Operations Research* (In press).
  - winner of 2009 Best Paper Award of the Service Science Section of INFORMS (sponsored by IBM)

### Submitted/Under review

24. M. Ayvaci\*, J. Shi\*, Q. Su, S. Lubner and **O. Alagoz** (2010), "Cost-Effectiveness of Adjuvant FOLFOX Chemotherapy for Patients with Stage II Colon Cancer," under revision for 2nd submission to *Medical Decision Making*.
25. D. Ge, A. Krishnamurty, **O. Alagoz** (2010), "Optimal Production Control Policy for Kanban Controlled Systems with Advance Demand Information," submitted.
26. **O. Alagoz**, J. Chhatwal\*, and E. S. Burnside (2010), "Optimizing the Level of Follow-up Recommendations with Comparison to Current Clinical Practice," submitted.
27. M. Ayvaci\*, **O. Alagoz**, J. Chhatwal\*, M. Lindstrom, E. Sickles, H. Nassif, K. Kerlikowske, and E. S. Burnside (2011), "Determining Whether Age Matters in Predicting Invasive Breast Cancer versus DCIS," submitted.
28. **O. Alagoz**, M. Ayvaci\*, and J. Linderoth (2011) "Optimally Solving Markov Decision Processes with Total Expected Discounted Reward Function: Linear Programming Revisited," submitted.
29. T. Ayer\*, **O. Alagoz**, N. K. Stout, and E.S. Burnside (2011) "Designing a New Breast Cancer Screening Program Considering Adherence," submitted.
30. E. S. Burnside, J. Chhatwal\*, **O. Alagoz**, and (2011), "Mathematical Model to Understand and Personalize the Risk Threshold at Which to Recommend Breast Biopsy," submitted.
31. F. S. Erenay\*, **O. Alagoz**, and A. Said (2011) "Optimizing Colonoscopy Screening for Colorectal Cancer Prevention and Surveillance," submitted.
  - winner of IIE 2009 Annual Meeting Best PhD Dissertation Scientific Poster Award

### REFEREED BOOK CHAPTERS (\*= one of my students)

1. **O. Alagoz**, A. J. Schaefer and M. S. Roberts (2009), "Optimizing Organ Allocation and Acceptance," in *Handbook of Optimization in Medicine* edited by Panos Pardalos and Edwin Romeijn, Springer US, p. 1-24.

2. **O. Alagoz** and M. Ayvaci\* (2011), "Uniformization in Markov Decision Processes," *Encyclopedia for Operations Research and Management Science* edited by James J. Cochran, John Wiley & Sons. Published online: 15 February 2011, DOI: 10.1002/9780470400531.eorms0934.
3. **O. Alagoz**, T. Ayer\*, and F. S. Erenay\* (2011), "Operations Research Models for Cancer Screening," *Encyclopedia for Operations Research and Management Science* edited by James J. Cochran, John Wiley & Sons. Published online: 14 January 2011, DOI: 10.1002/9780470400531.eorms0597.
4. **O. Alagoz** (2011), "Optimizing Cancer Screening using Partially Observable Markov Decision Processes," *INFORMS Tutorials in Operations Research, Vol 8*. edited by J. Geunes, INFORMS, Hanover, MD, pp. 75-89. Published online: <http://dx.doi.org/10.1287/educ.1110.0090>.

## REFEREED CONFERENCE PROCEEDINGS

1. **O. Alagoz**, C. L. Bryce, J. Chang, A. J. Schaefer, D. C. Angus, and M. S. Roberts (2002), "Predicting the future health status of liver disease patients using empiric stochastic models," Proceedings of the 24<sup>th</sup> Annual Meeting of the SMDM. Also appears in Medical Decision Making, 22(6), p. 541. Abstract.
2. **O. Alagoz**, A. J. Schaefer, L. M. Maillart, and M. S. Roberts (2002), "Determining the optimal timing of living donor liver transplantation using a Markov decision process (MDP) model", Proceedings of the 24<sup>th</sup> Annual Meeting of the Society for Medical Decision Making (SMDM). Also appears in Medical Decision Making, 22(6), p. 558. Abstract.
3. **O. Alagoz**, B. A. Norman and A. E. Smith (2002), "Designing Aisle Networks to Facilitate Material Flow," Progress in Material Handling Research:2002 edited by R. Meller, M. K. Ogle, B. A. Peters, G. D. Taylor and J. Usher. p. 11-25. Material Handling Institute, Charlotte, NC.
4. C. L. Bryce, **O. Alagoz**, A.J. Schaefer, M.S. Roberts (2003), "Modeling the Progression of Liver Disease over Time: A Comparison of Level and Direction-based Algorithms," Proceedings of the 25<sup>th</sup> Annual Meeting of the SMDM. Also appears in Medical Decision Making 23(6), p. 556, 2003. Abstract.
5. M. S. Roberts, C. L. Bryce, A.J. Schaefer, S.M. Shechter, **O. Alagoz**, D.C. Angus (2003), "Optimal Organ Allocation Policy: A Biologically based Simulation Model," Proceedings of the 25<sup>th</sup> Annual Meeting of the SMDM. Also appears in Medical Decision Making 23(6), p. 575. Abstract.
6. **O. Alagoz**, L.M. Maillart, A.J. Schaefer, and M.S. Roberts (2005), "When to Accept a Cadaveric Liver Offer for Transplantation? A Markov Decision Process (MDP) Approach," Proceedings of the 26<sup>th</sup> Annual Meeting of the SMDM. Also appears in Medical Decision Making 25(1), p. E12. Abstract.
7. **O. Alagoz**, L.M. Maillart, A.J. Schaefer, and M.S. Roberts (2006), "Choosing Between Cadaveric and Living-Donor Livers: A Markov Decision Process (MDP) Model Approach," Proceedings of the 27<sup>th</sup> Annual Meeting of the SMDM. Also appears in Medical Decision Making, 26(1), p. E74. Abstract.
8. J. Chhatwal\*, **O. Alagoz**, C.E. Kahn, E.S. Burnside (2006) "A Logistic Regression Model to Aid Breast Cancer Diagnosis Based on the National Mammography Database Format," Proceedings of the 92<sup>nd</sup> Annual Meeting of Radiology Society of North America (RSNA) 2006. Abstract.
9. J. Chhatwal\*, **O. Alagoz**, C.E. Kahn, E.S. Burnside (2006) "Bayesian Network Versus Logistic Regression Model for Computer Aided Diagnosis of Breast Cancer," Proceedings of the 28<sup>th</sup> Annual Meeting of the SMDM. Abstract.

10. B. Sandikci, **O. Alagoz**, L. M. Maillart, M. S. Roberts, and A. J. Schaefer (2006), "Using the Waiting List Information to Optimize the Timing of Liver Transplantation," Proceedings of the 28<sup>th</sup> Annual Meeting of the SMDM. Abstract.
11. J. Chhatwal\*, **O. Alagoz**, and E.S. Burnside (2007), "When to Biopsy in Breast Cancer Diagnosis? A Quantitative Model Using Markov Decision Processes," Proceedings of the 29th Annual Meeting of the SMDM. Abstract.
12. J. Chhatwal\*, **O. Alagoz**, and E.S. Burnside (2007), "Receiver Operating Characteristic (ROC) Curves versus Precision-Recall (PR) Curves in Models Evaluated with Unbalanced Data," Proceedings of the 29th Annual Meeting of the SMDM. Abstract.
13. B. Sandikci, **O. Alagoz**, L. M. Maillart, M. S. Roberts, and A. J. Schaefer (2007), "Estimating the Price of Privacy in Liver Transplantation," Proceedings of the 29th Annual Meeting of the SMDM. Abstract.
14. E.S. Burnside, J. Chhatwal\*, K. Shinki, K. A. Shaffer, L. R. Salkowski, J. P. Fine, and **O. Alagoz** (2007), "Calculating Mammography Performance at the Examination versus Finding Level Significantly Affects Outcome Measures," Proceedings of the 93rd Annual Meeting of RSNA 2007. Abstract.
15. J. Chhatwal\*, **O. Alagoz**, and E. S. Burnside (2008) "Optimal Policies for Breast Biopsy Decision Making," Proceedings of the Manufacturing and Service Operations Management (MSOM) Society 2008 Conference. Abstract.
16. J. Chhatwal\*, **O. Alagoz**, and E. S. Burnside (2008), "Biopsy or Short Interval Follow-Up? A Markov Decision Process Model for Early Diagnosis of Breast Cancer," Proceedings of the 30th Annual Meeting of the SMDM. Abstract.
17. J. Chhatwal\*, **O. Alagoz**, H. G. Nassif, E. A. Sickles, C. S. Jovais, and E. S. Burnside (2008), "Predicting the Risk of Invasive versus In-situ Breast Cancer to Aid Clinical Management," Proceedings of the 30th Annual Meeting of the SMDM. Abstract.
18. T. Ayer\*, **O. Alagoz**, J. Chhatwal\*, J. Shavlik, C. Kahn, and E. S. Burnside (2008), "Comparing Artificial Neural Network Training Strategies for Breast Cancer Risk Prediction," Proceedings of the 30th Annual Meeting of the SMDM. Abstract.
19. F. S. Erenay\*, **O. Alagoz**, R. Banerjee, and R. Cima (2008), "Simulation of Secondary Colorectal Cancer under Colonoscopy Screenings," Proceedings of the 30th Annual Meeting of the SMDM. Abstract.
20. **O. Alagoz**, J. Chhatwal\*, and E. S. Burnside (2008), "A Computational Model to Calculate an Optimal Threshold for Biopsy or Short Interval Imaging Follow-Up Based on Patient Characteristics," Proceedings of the 94th Annual Meeting of RSNA. Abstract.
21. T. Ayer\*, J. Chhatwal\*, **O. Alagoz**, E. S. Burnside (2008), "Comparison of Artificial Neural Network and Logistic Regression Model for Breast Cancer Risk Prediction," Proceedings of the 94th Annual Meeting of RSNA. Abstract.
22. D. Ge, A. Krishnamurty, **O. Alagoz** (2009), "Optimal Release Policy for Kanban Control Systems with Imperfect Advance Demand Information," Proceedings of the MSOM Society 2009 Conference. Abstract.
23. N. Batina\*, **O. Alagoz**, A. Trentham-Dietz, M. Rosenberg, R. Gangnon, and D. Fryback (2009), "Using Computer Simulation to Investigate Racial Disparities in the Natural History of Breast Cancer," Proceedings of the 31st Annual Meeting of the SMDM. Abstract.

24. M. Ayvaci \*, **O. Alagoz**, J. Chhatwal\*, E.S. Burnside, and E. Sickles (2009), "Superior Performance of Bayesian Networks in Predicting the Risk of Invasive versus In-Situ Breast Cancer in Older Women," Proceedings of the 31st Annual Meeting of the SMDM. Abstract.
25. T. Ayer\*, **O. Alagoz**, J. Chhatwal\*, J. Shavlik, C. Kahn, and E.S. Burnside (2009), "Discrimination and Calibration of Artificial Neural Networks in Mammographic Diagnosis," Proceedings of the 31st Annual Meeting of the SMDM. Abstract.
26. T. Ayer\*, **O. Alagoz**, and N. K. Stout (2009), "A Mathematical Model to Optimize Breast Cancer Screening Policy," Proceedings of the 31st Annual Meeting of the SMDM. Abstract.
27. A. Said, F. S. Erenay\*, M. Akan, B. Ata, and **O. Alagoz** (2009), "Optimizing Liver Allocation Policy," Proceedings of the 60th Annual Meeting of the American Association for the Study of Liver Diseases (AASLD), Also published in *Hepatology*, 50(4) 647A-648A 732 Suppl. Abstract.
28. E.S. Burnside, J. Chhatwal\*, and **O. Alagoz** (2009), "Using Decision Analytic Techniques to Confirm the Validity of a 2% Risk of Malignancy Threshold for Breast Biopsy," Proceedings of the 95th Annual Meeting of RSNA. Abstract.
29. F. S. Erenay\*, **O. Alagoz**, and A. Said (2010), "Optimal Colonoscopy Screening Policies for Colorectal Cancer Prevention and Surveillance," Proceedings of the 32nd Annual Meeting of the SMDM. Abstract.
30. T. Ayer\*, **O. Alagoz**, N.K. Stout, and E.S. Burnside (2010), "Designing Risk-Tailored Breast Cancer Screening Policies Considering Imperfect Adherence," Proceedings of the 32nd Annual Meeting of the SMDM. Abstract.
31. M.U.S. Ayvaci\*, **O. Alagoz**, and E.S. Burnside (2010), "The Effect of Budgetary Restrictions on the Optimal Decision Thresholds for Breast Cancer Diagnosis," Proceedings of the 32nd Annual Meeting of the SMDM. Abstract.
32. M.U.S. Ayvaci\*, Y. Wu\*, **O. Alagoz**, and E.S. Burnside (2010), "Mutual Information Analysis Used to Determine Most Informative Features in Breast Cancer Diagnosis," Proceedings of the 32nd Annual Meeting of the SMDM. Abstract.
33. T. Ayer\*, **O. Alagoz**, and E.S. Burnside (2010), "Why May Neural Network-based CADx Models Fail in Clinical Translation?," Proceedings of the 96th Annual Meeting of RSNA. Abstract.
34. Y. Wu\*, M.U.S. Ayvaci\*, D. Vanness, E.S. Burnside, and **O. Alagoz** (2011), "Expected Utility Model Used to Compare the Value of Screening Versus Diagnostic Mammography," Proceedings of the 33rd Annual Meeting of the SMDM. Abstract.
35. Y. Wu\*, M.U.S. Ayvaci\*, D. Vanness, E.S. Burnside, and **O. Alagoz** (2011), "Determining the Most Informative Mammographic Features in Breast Cancer Diagnosis by Multidimensional Mutual Information Analysis and Bayesian Reasoning," Proceedings of the 33rd Annual Meeting of the SMDM. Abstract.
36. J. Codella\*, N. Safdar, and **O. Alagoz** (2011), "Using Agent-based Simulation to Evaluate Policies for Clostridium Difficile Infection Control in a Hospital," Proceedings of the 33rd Annual Meeting of the SMDM. Abstract.
37. M. Ayvaci\*, **O. Alagoz**, and E.S. Burnside (2011), "How Budgetary Restrictions Effect Post-Mammography Management Decisions: An Analytical Model," Proceedings of the 97th Annual Meeting of RSNA. Abstract.

38. T. Ayer\*, **O. Alagoz**, N. Stout, and E.S. Burnside (2011), "Two Missing Factors in Mammography Screening Guidelines: Risk and Adherence," Proceedings of the 97th Annual Meeting of RSNA. Abstract.

## SELECTED WORKING PAPERS

1. J. Chhatwal\*, **O. Alagoz**, and E. S. Burnside, "Pitfalls of ROC Curves When Dealing with Unbalanced Data: Evaluations with Precision-Recall Curves," in preparation.
2. G. Saka, **O. Alagoz**, L. M. Maillart, A. J. Schaefer, and M. S. Roberts, "Determining the Optimal Set of Regions for Multiply Listing Patients with End-Stage Liver Disease," in preparation.
3. N. Batina\*, **O. Alagoz**, A. Trentham-Dietz, M. Rosenberg, R. Gangnon, and D. Fryback, "Using Computer Simulation to Investigate Racial Disparities in the Natural History of Breast Cancer," in preparation.
4. M.S. Roberts, C. L. Bryce, J. Chang, **O. Alagoz**, B. Sandikci, M. Demirci, S.N. Proon, and A. J. Schaefer, "The Timing of Adult Living Donor Liver Transplants in the United States," in preparation.
5. J. Codella\*, **O. Alagoz**, N. Safdar, "Optimal Control of Clostridium Difficile Outbreak in Hospitals," in preparation.
6. Y. Wu\*, E.S. Burnside, M. Ayvaci\*, D. Vanness, **O. Alagoz**, "Mutual Information Analysis for Determining Most Informative Mammographic features in Breast Cancer Diagnosis," in preparation.
7. U. Siebert, **O. Alagoz**, A.M. Bayoumi, B. Jahn, D.K. Owens, D.J. Cohen, K.M. Kuntz, "State-Transition Modeling: A Report of the ISPOR-SMDM Modeling Good Research Practices Task Force Working Group - Part 5," in preparation.

## FUNDED RESEARCH (Total: \$2,144,192 for Alagoz)

### External Funding (Total: \$1,809,259 for Alagoz)

- **O. Alagoz** (PI)  
"Optimal Design of the Liver Allocation System Considering Patient Preferences"  
National Science Foundation Grant CMMI-0700094 (6/15/2007 – 5/31/2011)  
Funding Level: \$149,854
- **O. Alagoz** (PI) – D. Fryback, A. Trentham-Dietz, M. Rosenberg (Co-investigators),  
"Using the UWBCS to Assess Racial Disparities in Breast Cancer Incidence & Survival"  
National Cancer Institute Grant R03CA130727 (7/10/2007 – 6/30/2010)  
Funding Level: \$139,480
- **O. Alagoz** (PI) – E. Burnside, J. Fine (Co-investigators),  
"Using Markov Decision Processes to Optimize Breast Biopsy Decision Making"  
National Cancer Institute Grant R21CA129393 (2/1/2008 – 1/31/2011)  
Funding Level: \$338,613
- **O. Alagoz** (Co-investigator) – A. Trentham-Dietz (PI)  
"Breast Carcinoma in situ: Predicting Risk and Outcomes" PI: A. Trentham-Dietz  
National Cancer Institute Grant R01CA67264 (12/1/2008 – 11/30/2013)  
Funding Level: \$1,858,120 (Alagoz portion: \$268,451)
- **O. Alagoz** (Director of the Simulation Center, Community Academic Partnerships Core of UW-ICTR),

“Institute for Clinical and Translational Research” (PI: Drezner)  
NIH/NCRR Grant 1UL1 RR02511 (PI: Drezner) (9/17/2007-5/31/2012)  
Funding Level: \$25,400,000 (Alagoz portion: \$112,589)

- **O. Alagoz** (PI)  
“CAREER: Optimizing Disease Screening & Diagnosis”  
National Science Foundation Grant CMMI-0844423 (9/1/2009 – 8/31/2014)  
Funding Level: \$430,000
- **O. Alagoz** (Co-investigator) – J. Mandelblatt, A. Trentham-Dietz, et al. (PI)  
“Comparative Modeling: Informing Breast Cancer Control Practice & Policy”  
National Cancer Institute Grant 1U01CA152958-01 (9/1/2010 – 8/31/2015)  
Funding Level: \$7,237,630 (Alagoz portion: \$370,272)

### Other Funding (Total: \$334,933 for Alagoz)

- **O. Alagoz** (Director of the Simulation Center, Community Academic Partnerships Core of UW-ICTR),  
“UW-Institute for Clinical and Translational Research (ICTR)”  
Wisconsin Partnership for a Healthy Future - Medical Education Research Committee School of Medicine  
and Public Health Grant (1/1/2007 – 3/31/2009)  
Funding Level: \$6,800,000 (Alagoz portion: \$139,653)
- **O. Alagoz** (PI)  
“Using MDPs to Optimize Breast Cancer Screening & Control”  
Wisconsin Alumni Research Funding PRJ13AJ (7/1/2008 – 6/30/2009)  
Funding Level: \$32,266
- **O. Alagoz** (Collaborator-subaccount from several grants)  
“Optimizing Mammography Interpretation,” E. S. Burnside (PI)  
University of Wisconsin-Madison School of Medicine and Public Health (4/1/2006 – present)  
Funding level: \$163,014 (Alagoz portion)

## STUDENT ADVISING

### PhD Student Supervision

1. Jagpreet Chhatwal (UW-Madison), graduated in 2008
  - a. Current Position: Assistant Professor, University of Pittsburgh, Department of Health Policy and Management
  - b. Dissertation Title: "Optimal Management of Mammography Findings for Breast Cancer Diagnosis"
  - c. winner of the INFORMS 2007 Best Poster Award, winner of the 2008 Best Student Paper Competition Award of the Decision Analysis Society (DAS) of INFORMS, winner of the 2008 Best Student Paper Competition Award of the Manufacturing and Service Operations Society (MSOM) of INFORMS
  - d. winner of the INFORMS George B. Dantzig Dissertation 2nd place Award, 2009
2. Fatih Safa Erenay (UW-Madison), graduated in 2010
  - a. Current Position: Assistant Professor, University of Waterloo, Department of Management Sciences

- b. Dissertation Title: "Optimal Screening Policies for Colorectal Cancer Prevention and Surveillance"
  - c. winner of the IIE 2009 Annual Meeting Best PhD Scientific Poster Award, winner of the INFORMS 2009 Service Science Section Best Paper Award
3. Turgay Ayer (UW-Madison), graduated in 2011
    - a. Current Position: Assistant Professor, Georgia Institute of Technology, Department of Industrial and Systems Engineering
    - b. Dissertation Title: "Optimal Policies for Personalized Breast Cancer Screening Policies"
    - c. winner of the INFORMS 2009 Best Poster Award, winner of the SMDM 2009 Lee B. Lusted Student Prize Award, winner of the INFORMS 2010 Bonder Scholarship for Health Services, finalist for INFORMS 2011 Decision Analysis Society Best Paper Competition
  4. Mehmet Ayvaci (UW-Madison), August 2008-present
  5. James Codella (UW-Madison), August 2009-present
  6. Mucahit Cevik (UW-Madison), August 2011- present

**Other Student Supervision**

1. Yirong Wu (UW-Madison)- Post-doctoral researcher, August 2009- present
2. Jinghua Shi (UW-Madison) Visiting PhD student from Shanghai Jiao Tong University, 2009- 2010

**Doctoral Committee Member**

1. Elise Wu (UW-Madison), June 2011- present
2. Qiang Zhou (UW-Madison), graduated in 2011
3. Yi-Chun Tsai (UW-Madison), graduated in 2011
4. Deng Ge (UW-Madison), graduated in 2011
5. Matt Austin (UW-Madison), graduated in 2011
6. Nan Chen (UW-Madison), graduated in 2010
7. Weiwei Chen (UW-Madison), graduated in 2010
8. Tao Wu (UW-Madison), graduated in 2010
9. Gorkem Saka (University of Pittsburgh), graduated in 2010
10. Naraphorn Haphuriwat (UW-Madison), graduated in 2010
11. Aaron Armstrong (UW-Madison), graduated in 2010
12. Liang Pi (UW-Madison), graduated in 2010
13. Li Zheng (UW-Madison), graduated in 2009
14. Sherif A. Tawfik (UW-Madison), graduated in 2009
15. Hao Howard Zhang (UW-Madison), graduated in 2008
16. Jun Zhuang (UW-Madison), graduated in 2008
17. Burhaneddin Sandikci (University of Pittsburgh), graduated in 2008
18. Kuang-Yi Wen (UW-Madison), graduated in 2006
19. Hoksung Yau (UW-Madison), graduated in 2006

## TEACHING EXPERIENCE

**Instructor**, August 2005 - present, Department of Industrial and Systems Engineering, University of Wisconsin-Madison.

- (ISyE 517) Decision Making in Health Care, (ISyE 313) Engineering Economic Analysis, (ISyE 723) Dynamic Programming and Associated Topics, (ISyE 417) Introduction to Health Systems Engineering, (ISyE 816) Stochastic Models in Health Care

**Instructor**, August 2004 - June 2005, Weatherhead School of Management, Case Western Reserve University.

- (OPRE 425A) Probability Applications, (OPRE 425B) Probability II, (OPRE 402) Stochastic Models, (OPRE 432A) Simulation Models with Applications, (OPRE 432B) Simulation Design, (OPRE 412B) Theory of Nonlinear Programming

**Instructor**, April 2004 - July 2004, Joseph M Katz Graduate School of Business, University of Pittsburgh.

- (BQOM 2411) Decision Technologies in Manufacturing and Operations Management

**Instructor**, September 2003 – December 2003, Industrial Engineering Department, University of Pittsburgh.

- (IE 1081) Operations Research

### Other Teaching

- Co-instructor and co-organizer for the short course on “Markov Decision Processes-Analytic Methods for Sequential Decisions,” Society for Medical Decision Making (SMDM) Annual Meeting (2003)
- Co-instructor and co-organizer for the short course on “Medical Decision Making with Bayesian Networks,” SMDM Annual Meeting (2008,2009,2010)
- Co-instructor and co-organizer for the short course on “Medical Decision Making with Bayesian Networks,” Food and Drug Administration (FDA)- (2009)

**Teaching Assistant**, September 2000 – May 2002, Industrial Engineering Department, University of Pittsburgh

- (IE 2001) Operations Research, (Engr 0020) Probability & Statistics for Engineers, (IE 2025) Facility Layout and Materials Handling, (IE 1082) Probabilistic Models in Operations Research

**Teaching Assistant**, September 1999 - July 2000, Industrial Engineering Department, Middle East Technical University, Ankara, Turkey.

- (IE351) Operations Research -1, (IE366) Operations Research -2

## INVITED SEMINARS

- (September 2011) Georgia Institute of Technology, Department of Industrial and Systems Engineering
- (January 2011) Bilkent University, Department of Industrial Engineering, Turkey
- (January 2011) Bogazici University, Department of Industrial Engineering, Turkey
- (December 2010) Koc University, Department of Industrial Engineering, Turkey
- (December 2010) Middle East Technical University, Department of Industrial Engineering, Turkey
- (November 2010) Ohio State University, Fisher College of Business
- (September 2010) Medical College of Wisconsin, Division of Biostatistics
- (March 2010) World Health Organization, Geneva, Switzerland
- (October 2009) University of Chicago, Booth School of Business

- (April 2009) Northwestern University, Department of Industrial Engineering and Management Sciences
- (October 2008) North Carolina State University, Department of Industrial and Systems Engineering
- (May 2008) University of British Columbia, Sauder School of Business
- (May 2008) University of British Columbia, Center for Health Care Management/British Columbia Cancer Agency
- (November 2007) Northwestern University, Kellogg School of Management
- (November 2007) University of Pittsburgh, Department of Industrial Engineering
- (October 2007) Arizona State University, Department of Industrial Engineering
- (April 2007) Mayo Clinic, Division of Health Care Policy & Research
- (August 2006) Mayo Clinic, Division of Health Care Policy & Research
- (January 2006) University of Wisconsin-Madison, Department of Population Health Sciences
- (February 2005) Stony Brook University, Department of Applied Mathematics and Statistics
- (February 2005) University of Arizona, Systems and Industrial Engineering Department
- (February 2005) University of Wisconsin-Madison, Department of Industrial and Systems Engineering
- (February 2005) University of South Florida, Department of Industrial and Management Systems Engineering
- (January 2005) Sabanci University, Faculty of Engineering and Natural Sciences
- (January 2005) Dartmouth College, Tucker School of Business
- (January 2005) University of Miami, School of Business
- (January 2005) Dartmouth College, Center for the Evaluative Clinical Sciences
- (December 2004) University of British Columbia, Sauder School of Business
- (December 2004) Indiana University at Bloomington, Kelley School of Business
- (December 2004) Bilkent University, Faculty of Business Administration
- (December 2004) British Columbia Transplant Society, Vancouver, Canada.
- (November 2004) Case Western Reserve University/MetroHealth Medical Center, Center for Health Care Research and Policy
- (September 2004) Case Western Reserve University, Weatherhead School of Management
- (March 2004) Carnegie Mellon University, Tepper School of Business
- (December 2003) Clemson University, Department of Industrial Engineering
- (October 2003) University of Pittsburgh, School of Medicine, Center for Research on Health Care
- (October 2002) University of Pittsburgh, School of Medicine, Center for Research on Health Care

## CONSULTING

- World Health Organization Headquarters, Geneva, Switzerland

## PROFESSIONAL SERVICE

- Editorial Board Member of *Medical Decision Making* (2009-present); MDM is the #3 journal in medical informatics area out of 20, #8 journal in Health Care Science & Services area out of 62 according to the SCI 2008 impact factors

- Associate Editor for ***IIE Transactions on Healthcare Systems Engineering***
- President, Health Applications Society of INFORMS (2011-2012)
- Referee for *Operations Research, Management Science, INFORMS Journal on Computing, Production and Operations Management, Discrete Event Dynamic Systems, Asian Pacific Journal of Operational Research, Society for Medical Decision Making Annual Conference, Health Care Management Science, Medical Decision Making, Value in Health, IEEE Transactions on Dependable and Secure Computing, Computers and Industrial Engineering, OMEGA: The International Journal of Management Science, Industrial Engineering Research Conference, Population Health Metrics, Kentucky Science and Engineering Foundation (KSEF)*
- National Science Foundation (NSF)
  - Panelist, Service Enterprise Engineering (2005, 2007, 2009, 2010)
  - Panelist, Graduate Research Fellowship Program (2011)
- Panelist for Singapore Ministry of Health (2010)
- Panelist for National Defense Science and Engineering Graduate Fellowship Program (2011)
- Institute for Operations Research and Management Science (INFORMS)
  - President, Health Applications Society (2011-present)
  - Vice-president (President-elect), Health Applications Section (2009-2010)
  - Cluster Chair (Health Applications, INFORMS 2010 Annual Meeting)
  - Member, Health Applications Section (2001-present)
  - Treasurer, Health Applications Section (2008-2009)
  - Board member of INFORMS Health Applications Section (2004-2007)
  - Judge, George Nicholson Student Paper Competition (2009-2010)
  - Judge, MSOM Society Student Paper Competition (2009)
  - Co-founder of INFORMS Student Chapter at the University of Pittsburgh (2003)
  - President of INFORMS Student Chapter at the University of Pittsburgh (2003-2004)
  - Session Chair (Scheduling III-INFORMS 2001 Annual Meeting; Stochastic Models in Health Care-INFORMS Annual Meetings in 2005, 2007, 2008, 2009)
- Society for Medical Decision Making (SMDM)
  - Member, Discrete-event System Simulation Interest Group (2002-present)
  - Referee for SMDM Annual Meeting (2005-2010)
- Institute of Industrial Engineers (IIE)
  - Member, Operations Research Division (2003-present)
  - Track Chair (Health and Service Systems, IERC 2009 Annual Meeting)
  - Reviewer (2006,2008,2009)
- University of Wisconsin-Madison
  - Committee Appointments in the College of Engineering
    - Equity and Diversity Committee (2006-present)
  - Committee Appointments in the Department of Industrial and Systems Engineering
    - Graduate Admissions Committee (2005-present)

- ISyE Student Advisory Board (2006-2008)
- Health Systems Engineering Area Convenor (2008-present)
- Faculty Affairs Committee (2008-present)
- Academic Affairs Committee (2008-present)