S. Ay•a Erdogan, PhD

Contact Information:

San Jose State University, Industrial and Systems Engineering
Davidson College of Engineering, One Washington Square, San Jose, CA 95192
Email: ayca.erdogan@sjsu.edu

Research Interests

Decision making under uncertainty
  - Stochastic Programming
  - Simulation Modeling
Applications of operations research to healthcare delivery & medical decision making
  - Simulation modeling of disease progression and optimal intervention planning
  - Scheduling optimization and healthcare operations management

ProfessionalBackground

8/2014 -   Assistant Professor, San Jose State University,

- Meza, R., Haaf K., Kong, C., Erdogan, S.A., et.al., "Comparative analysis of 5 lung cancer natural history and screening models that reproduce outcomes of the NLST and PLCO trials", Cancer, vol. 120 (11), pp. 1713-1724, 2014.

- McMahon P., Meza, R., Plevritis, S.K., Black, W., Tammemagi, M., Erdogan, S.A., et. al., "Comparing Benefits from Many Possible Computed Tomography Lung Cancer Screening Programs: Extrapolating the National Lung Screening Trial Using Comparative Modeling". PlosOne, 2014 (DOI 10.1371/journal.pone.0099978)

- De Koenig, H, Plevritis, S.K, Meza R., Haaf, K., Munshi, V., J., Erdogan, S.A., et. al., "Benefits and Harms of CT Screening for Lung Cancer in the US Population", Annals of Internal Medicine, 160 (5) pp 311-320, 2014.

- Erdogan, S.A., Denton, B., "Dynamic Appointment Scheduling of a Stochastic Server with Uncertain Demand". INFORMS Journal on Computing, vol. 25, no. 1, pp 116-132, 2013.

- Erdogan, A., Denton, B., "Surgery Planning and Scheduling", Wiley Encyclopedia of Operations Research and Management Science, 2010.

- Erdogan, S.A., Gose, A. H. and Denton, B., "Online Appointment Sequencing and Scheduling". Submitted to IIE Transactions (3rd round revision), 2012.

- Erdogan, S.A., Plevritis, S.K., "A Model Based Estimate of Mortality Reduction with CT Screening for Lung Cancer". Proceedings of the INFORMS Workshop on Data Mining and Health Informatics, 2012

- Kahraman, C., Ates, N, Cevik, S., Gulbay, M, Erdogan, S.A., "Hierarchical fuzzy TOPSIS model for selection among logistics information technologies", Journal of Enterprise Information Management, Vol. 2, pp. 143-168.

- Sahin*, A., Gumussoy, C. A., Kabak, O., "Supplier Selection for Different Product Categories", National YA/EM 2004 Conference Proceedings, Adana, Turkey, 2004 (in Turkish).

Working Papers

- Shen, S., Erdogan, S.A., "Distributionally Robust Appointment Scheduling and Server Allocation Problem with Ambiguous Service Time and Customer Show". 2014.

- Erdogan, S.A., Han, S., Lin, R., Wan, W., Sigal, S., Plevritis, S.K., "Model Based Estimates of Mortality Reduction and Overdiagnosis for Mayo CT Lung Cancer Screening Study", 2014.

- Han, S**., Erdogan, S.A.**, Plevritis, S.K., "Evaluating the Impact of Varied Compliance in Lung Cancer Screening Recommendations using a Microsimulation Model", 2014.

- Tsai, E.**, Erdogan, S.A.**, Plevritis, S.K., "Health and Economic Particle Cost of 3 CT Lung screening 323, 2014

¥ Berg, B., Erdogan, A., Denton, B., Rohleder, T., Huschka, T., ÒOptimal Booking and Scheduli Outpatient Procedure CentersÓ, Poster Present, INFORMS Annual Conference, Charlotte, Octob 2011.

¥ Denton, B.T., Erdogan, A., ÒOptimization of Online Appointment SchedÓling, INFORMS Healthcare Conference, Montreal, Canada, June 2011.

¥ Erdogan, A., Gose, A., Denton, B., ÒDynamic Sequencing and Scheduling of Appointment Based SystemsÓ, INFORMS Annual Conference, Charlotte, NC, October 2010. (Invited talk)

¥ Erdogan, A., Denton, B., ÒA Multi-Stage Stochastic Programming Model for Appointment Schedu Under UncertaintyÓ,
  ▪ INFORMS Annual Conference, San Diego, CA, October 2009.
  ▪ Health Care Engineering Seminar Series, North Carolina State University, Raleigh, NC, Septemb
  ▪ INFORMS Computing Society Conference, Charleston, SC, January 2009.

¥ Erdogan, A., Denton, B., ÒStochastic Optimization of Outpatient Appointment Scheduling Systems wi Uncertainty in Patient DemandÓ,
  ▪ INFORMS 2008 Annual Meeting, Washington DC, October 2008.
  ▪ Poster Presentation, Mayo Clinic Conference on Systems Engineering & Operations Research Care, Rochester MN, September 2008
  ▪ Poster Presentation, Health Care Engineering Symposium, Raleigh NC, April 2008.

Academic Experience (Research & Teaching)

8/2014 Ð present   Assistant Professor
San Jose State Unievrsity

¥ Instructor of ISE 135 Design of Experiments (undergraduate level)

¥ Instructor of ISE 230 – Advance Operatiosn Rsearch (graduate level)

1/2014 Ð 7/2014   Visiting Assistant Professor
University of California, Daniel J. Epstein Department of Industrial and Systems Engineering

¥ Designer and Instructor of ISE 599 Advance Topics in Healthcare Modeling (PhD level course)

¥ Instructor of ISE 530 Introduction to Operations Research (Graduate level course)

4/2011 Ð 1/2014   Postdoctoral Research Fellow
Stanford University, School of Medicine

¥ Research on simulation modeling of cancer progression using large scale cancer registry and clinica sets, and simulation based optimization approaches for estimating natural history parameters, to find screening policies and to analyze effects of CT screening on lung cancer incidence and mortality

1/2006 Ð 12/2010   Research Assistant
North Carolina State University, Graduate Program in Operations Research

¥ Research for PhD thesis on stochastic optimization of scheduling problems in health care systems.

1/2008 Ð 1/2009   Teaching and advising experience
North Carolina State University, Graduate Program in Operations Research

¥ Co-advisor of a team of undergraduate students that designed a surgery scheduling decision support (sponsored by Mayo Clinic) for ISE 498 Undergraduate Senior Design Project, (1st place, IIE Society for Health Systems Student Paper Award, Chicago, IL, 2009)

¥ Co-Instructor of ISE 361 Deterministic Models in Industrial Engineering and Co-Instructor of OR791 Ð Stochastic Programming

1/2006 Ð 1/2008   Teaching Assistant
North Carolina State University, Graduate Program in Operations Research

¥ Grading and tutoring for OR505 Introduction to Operations Research and OR791 Heuristic Methods in Discrete Optimization

9/2001 - 8/2004   Teaching and Research Assistant
                     Istanbul Technical University, Department of Industrial Engineering
¥   Research for MS thesis on management of inventory supply risks and multi criteria decision making methods
    Lecturing and grading for several courses including Selected Topics in IE, Quality Control, Facility Planning

Professional Activities

¥   President of NCSU INFORMS Student Chapter for 2008-2009 academic year (winner of INFORMS Student
    Chapter Annual Award Magna Cum Laude)
¥   Secretary of NCSU INFORMS Student Chapter 2007-2008 academic year (winner of INFORMS Student
    Chapter Annual Award Magna Cum Laude)
¥   Representative of the Operations Research Program at University Graduate Student Association 2008-
    2009 academic year
¥   Referee
    ▪ European Journal of Operations Research (2011-2012)
    ▪ International Journal of Production Research (2014)
    ▪ Health Care Management Science (2008-2014)
    ▪ Production and Operations Management (2008-2013)
    ▪ Omega (2009-2013)
    ▪ IIE Transactions on Health Systems Engineering (2013)
    ▪ Health Systems (2013)
¥   Session Chair
    ▪ INFORMS 2013 Health Care Conference, Chicago, IL
    ▪ INFORMS 2009 Annual Conference, San Diego, CA
    ▪ INFORMS 2008 Annual Conference, Washington, DC

Honors and Awards

¥   OMEGA RHO International Honor Society
¥   Selected by the NCSU OR Program to attend INFORMS Doctoral Colloquium, San Diego, 2009.

Computer Skills

¥   Programming Language: C++, MATLAB, VBA
¥   Software Tools: CPLEX, OPL, AMPL, LINDO, LINGO
¥   Statistical Software Package: R, SAS, Minitab
¥   Simulation Package: ARENA