Retsef Levi - Curriculum Vitae

J. Spencer Standish (1945) Professor of Operations Management,
MIT Sloan School of Management (Operations Management Group)

PERSONAL

Date of birth: March 1971
Place of birth: Israel
Languages: Hebrew - mother-tongue; English - fluent, at mother-tongue level; Arabic - basic+ level.
Citizenship: Israel and U.S.
Contact details: Room E62-562, 100 Main Street, Cambridge, MA 02142
Tel.: 617/253-4155, Fax: 617/258-7579, Email: Retsef@mit.edu

EDUCATION

January 2002 – July 2005 -- Cornell University
Ph.D. in Operations Research (ORIE Department)
GPA: 4.2368/4.3

1996-1997 & 1999-2001 -- Tel-Aviv University
B.Sc. in Mathematics, trend of Operation Research
Final Grade: 96 (out of 100), Summa cum Laude
My B.Sc. studies were part of my service in the IDF (Israeli Defense Forces):
1996-1997   First academic year completed
1997-1999   Upon requests from IDF went back to active service
1999-2001   Second and third academic years completed (graduated in July 2001)

DOCTORAL THESIS

Co-Advisors: Robin Roundy and David Shmoys.
Minor Advisors: James Renegar (Applied Math) and Shane Henderson (Applied probability).
Thesis: "Computing Provably Near-Optimal Policies for Stochastic Inventory Control Models", under the supervision of Robin Roundy and David Shmoys

RESEARCH INTERESTS

- Supply chain and inventory management
- Revenue management and pricing
- Healthcare management
- Risk management
- Food Safety
- Multistage Stochastic Optimization
- Data-driven algorithms
- Combinatorial optimization

(See more on my research at http://retsef.scripts.mit.edu/)

SLOAN FACULTY AT THE SAME FIELD

- **Professor Steve Eppinger, Operations Management Group**
- **Associate Professor Vivek Farias, Operations Management Group**
- **Professor Charlie Fine, Operations Management Group**
- **Professor Steve Graves, Operations Management Group**
- **Professor Georgia Perakis, Operations Research Group**
- **Tauhid Zaman, Operations Management Group**
- **Karen Zheng, Operations Management Group**

NON-MIT EMPLOYMENT

July 2013 – July 2014
Feinberg Fellow, Weizmann Institute for Science, Israel

July 2005–August 2006
Herman Goldstine Postdoctoral Fellowship in the Department of Mathematical Sciences, IBM T.J. Watson Research Center, Yorktown Heights, NY

January 2002–July 2005
OR&IE Department, Cornell University, Ithaca, NY
(Instructor of several courses)

2001 - Business Development Consultant, Wisair Inc, Israel

Wisair is an Israeli hi-tech start-up company (of the RAD Group), which develops wireless solutions based on Ultra Wide Band (UWB) technology. The position included initiating and leading the potential market analysis and business development: initiating and promoting three major funding channels from the European Commission (1m Euro), an Israeli venture capital company ($5m)and the Israeli Chief Scientist

1990-2001 - Officer in the Israeli Defense Forces (IDF)

Since 1991, served as an Officer in an elite unit of the Intelligence Corps of the IDF. Filled different positions throughout the years, which involved highly complicated analysis of interdisciplinary projects. Work was identified by high pressure and required high level of creativity and original thinking.

1991-1994 - Intelligence Analyst Officer (analyzing technical intelligence material)

1994-1996 - Captain, Head of Section, supervising 8 soldiers and officers. Designated as an extra merit officer (received prize from IDF Intelligence Department)

1997-1999 – Major, Head of Section, supervising more than 25 soldiers and officers. Received prize for "Creative Thinking" (Awarded by the Head of the IDF Intelligence Corps)

1999-2001 – Tel-Aviv University

MIT EMPLOYMENT

July 2013 -
J. Spencer Standish (1945) Professor of Operations Management

July 2010 – 2013
J. Spencer Standish (1945) Associate Professor of Operations Management

July 2009 – June 2013
Associate professor (with tenure)

September 2006 -
Affiliated with the Operations Research Center (ORC) and the Computations for Design and Optimization (CDO) program at MIT

September 2006-June 2009
Robert N. Noyce Career Development Professor
Assistant Professor of Management, Sloan School, MIT, Cambridge, MA
(Affiliated with the Operations Research Center (ORC) and the Computations for Design and Optimization (CDO) program at MIT)

PROFESSIONAL ACTIVITIES

MIT Activities

- Participated on a Massachusetts Economics Delegation to Israel with the governor of Massachusetts (Dec 2016)
- Co-chair of the MIT Sloan Initiative of Health System Innovation conference "MIT Health Innovations: Technology, Analytics, and Systems" (October 2016)
- MIT Sloan Co-Director of the Leaders for Global Operations Program (2015-)
- Member of MIT Sloan faculty committee to develop Masters in Analytics program (2015-2016)
- Co-faculty Director of the MIT Sloan Initiative for Health System Innovation (IHSI) (2014-)
- Co-Chair of the 2013 MIT Healthcare Innovation Conference (December, 2013)
- Member in an institute committee for explaining a strategic relationship with Kaiser Permanente (2013)
- Co-lead faculty in an institute effort to develop a strategic relationship with the FDA (materialized into a contract – see awards section below) (2013)
- Leading an ongoing 9 year collaborative research initiative between Sloan and Mass General Hospital (MGH) on various system re-design problems across the hospital.
  - 2010-: Supervise 2 postdoctoral fellows and LGO students (4 a year). Project funded by MGH Currently over $1M per year)
  - 2008-2010: Supervised a postdoctoral fellow jointly funded by Sloan and MGH
- Leading collaborative efforts with several additional academic hospitals in the Boston area (Beth Israel Deaconess Medical Center and Children's Hospital) and across the US (AAMC, Presbyterian Hospital System)
- Teach in the Sloan Exec programs (BP Project Academy, BP Operations Academy – Term director, BP Group Leader Development Program, Aker, Vale and Operations Strategy 2-Day open enrollment program)
- Co-lead (with Bob Gibbons) on a customized Executive Education Program for Anesthesia Departments in the Harvard Medical School (MGH, BIDMC, BWH and Children's Hospital) and other Academic Medical Centers in Massachusetts. (2012)

- Lead the development and launch of new Healthcare Certificate (Launched in AY 2013) and currently serves as the academic director of the certificate
- Co-chair and organizer (with Tom Kochan) of half-day symposium at Sloan jointly with Partners Healthcare Systems (May 18, 2012) – "Collaborating to Control Costs and Deliver Quality: The Role of Organization Design and Capabilities in Health Care Policy" (participants included: MA Governor, Deval Patrick, MIT President, Susan Hockfield, CEO & President of Partners Healthcare Systems, Gary Gottlieb and many healthcare industry leaders)
- Member of non-degree Executive Ed education committee, 2011-2012
- Member of a committee that developed the "Enterprise Management" MBA track. Serve as the faculty lead of the track (2012-)
- Member of 8 Sloan promotion committees (2010-2014)
- Participated in the Sloan MBA Admin Day (gave mock up classes), 2010, 2011 and 2012
- Member of the Sloan Fellows and Executive MBA Program Committee, 2010-2012
- Member of the Sloan PhD Committee, 2010-2011
- Member in the Search Committee of the Operations Management Group 2009-2010, 2010-2011, 2011-2012
- Member of the Professional Standards Committee at Sloan, 2009-2010
- Participated in the Sloan Alumni Weekend (gave a lecture) 2011 and 2012
- Participated in a faculty panel for new MIT recruits, September 2011
- Affiliated faculty in the Operations Research Center (ORC). Member in the PhD admission committee (ORC) (2007, 2008, 2010 and 2011). Member of several general exams committees of PhD students at the ORC. Participated in a committee that reviewed the ORC curriculum and student placement
- Affiliated with the Leader for Global Operations (LGO) Program. Advise students and faculty liaison to MGH
- Affiliated with the NewDigs Center at MIT (received funding for a PhD student for 2012-2014)
- Meetings with visitors of the Office of Industry Liaison at MIT
- Member of the 2009 MSOM Conference Organizing Committee, which took place at MIT
- Participating in the admission process of the Computation for Design and Optimization (CDO) Master program

Other Activities

- Member of the 2013 Health Care Operations Management Special Interest Group (SIG) Paper Selection Committee
- Participated in a national Committee of the American Association of Medical Colleges (AAMC) to develop system thinking curriculum in resident programs
- EuroINFORMS XXVI (2013) Stream Chair
- Chair of the *Special Interest Group* (SIG) of Health Care Operations Management Conference (part of the 2011 *Manufacturing & Services Operations Management* (MSOM) Society Conference, June 2011)
- Associate Editor in *Operations Research* **(December 2011 -)**
- Associate Editor in *Management Science*, **(January 2009 – January 2014)**
- Associate Editor in *Mathematics of Operations Research*, **(March 2009 – December 2015)**
- Associate Editor in *Naval Research Logistics*, **(May 2009 -)**
- Area Editor in *Operations Research Letters*, **(January 2009 – December 2011)**
- Associate Editor Surveys of Operations Research and Management Science **(May 2009 – December 2010)**
- Referee for Mathematics of Operations Research, Operations Research, Management Science, Manufacturing and Service Operations Management (MSOM), Naval Research of

Logistics, Discrete Mathematics, European Journal of Operations Research, IEEE Transactions
- Judge in the 2006, 2007 and 2008 MSOM Student Paper Competitions
- Judge in the 2008, 2009 and 2012 Nicholson Student Paper Competition
- Participating in National Science Foundation (NSF) panel (2008, 2009, 2010, 2011)
- INFORMS 2007 - Inventory Cluster Chair

GRANTS AND AWARDS

2016 – Walmart Foundation Award: "Systemic Risk Management of Food Supply Chains in China" ($4.5M-$7.5M), lead PI (with other PIs: Yasheng Huang, Stacy Springs, Tony Sinsky, Michael Strano, Tauhid Zaman and Karen Zheng). Duration: October 2016-October 2019 (2021).

2016 - *Harold W. Kuhn Award*, an annual prize which recognizes an exceptional paper published in *Naval Research Logistics* (NRL) during the previous three years. Awarded to the paper ""Maintenance Scheduling for Modular Systems: Modeling and Algorithms" with Jack Muckstadt (Cornell), Danny Segev (Univ. of Haifa), and Eric Zarybnisky (U.S. Air Force)

2015 – NSF Award: "An Innovative Optimization and Computational Framework for Assortment Problems under Consider-then-Rank Choice Models" ($300K) with Vivek Farias. Duration: 09/15-08/18

2015 – Abdul Latif Jameel World Water and Food Security LAB MIT Award: "A Data-Driven Approach to Managing Food Safety in Global Supply Chains" ($200K) with Tauhid Zaman and Karen Zheng. Duration: 2015-2017

2013 – Moore Foundation Award (as part of a Beth Israel Deaconess Medical Center team): "Optimizing ICU Safety through Patient Engagement, System Science and Information Technology" ($5M). Duration: 2013-2014.

2013 – Food and Drug Association (FDA) Contract Award: "A Systematic Approach to Addressing Nontraditional Adulteration of FDA-Regulated Food and Drug Products and Ingredients Emanating from the Global Supply Chain" ($2.61M) with Stacy Springs and Tony Sinskey (MIT). Duration: 10/13-09/16.

2013 – Daniel M. Wagner Prize for Excellence in Operations Research Practice

2012 – "Jamieson Prize for Excellence in Teaching", Sloan School of Management, MIT

2012 – First prize in the 2012 "Best Case Competition" in the "First Case Writer" category by the European Case Clearing House (ECCH)

2012 – British Petroleum (BP) grant: "Managing Risk in Contractors and Suppliers Networks – Models, Data and Decisions" ($110K) with Georgia Perakis (MIT). Duration: 01/12-12/12.

2011 – AFOSR Grant: "An Optimization Framework for Air Force Logistics Models" ($612k) with Tom Magnanti (MIT). Duration: 07/11-06/14

2010 – Singapore-MIT Alliance (SMA): Data-Driven Algorithms ($70k) with Georgia Perakis (MIT). Duration: 07/10-06/12 ((in 2011 the grant was extended by an additional year with additional $60K)

2009 - NSF CAREER Award: "New Algorithmic Approaches to "Computationally Challenging Stochastic Supply Chain and Revenue Management Models" ($400K). Grant duration: 2009-2014.

2008 – "Optimization Prize for Young Researchers", awarded by the Optimization Society, INFORMS (for the paper "A 2-Approximation Algorithm for Stochastic Inventory Control Models with Lost-Sales," Retsef Levi, Ganesh Janakiraman and Mahesh Nagarajan)

2008 - MIT, Sloan Outstanding Teaching Award

2008 - AFOSR Grant: An Optimization Framework for Air Force Logistics Models

($522k), with Tom Magnanti. Grant Duration: 2008-2010, supplemented by additional $80k (November 2009)

2008 - Singapore-MIT Alliance (SMA): Data-Driven Algorithms ($160k). With Georgia Perakis (MIT). Grant Duration: 2008-2010

2007 - NSF Grant DMS-0732175: MSPA-MCS: Collaborative Research: Algorithms for Near-Optimal Multistage Decision-Making Under Uncertainty: Online Learning from Historical Samples (172,330), with David Gamarnik (MIT), David Shmoys and Paat Rusmevichientong (Cornell University and Tim Huh (Columbia University) Grant Duration: 2007-2010

2007 - IBM Faculty Award ($15K) - Awarded by the Department of Mathematical Sciences, IBM T.J. Watson Research Center, Yorktown Heights, NY

2006 – MIT Buchsbaum Grant ($50K)

2005 – IBM Herman Goldstine Postdoctoral Fellowship in the Department of Mathematical Sciences, T.J. Watson Research Center, Yorktown Heights, NY

2004 – First Prize of the MSOM Student Paper Competition

2001 - Award for Excellence, BA Studies at the School of Mathematics in Tel-Aviv University.

1999 - Received the prize of the Head of Intelligence Corps for "Creative Thinking"

1996 - Designated as an Extra Merit Officer (by the Head of the IDF Intelligence Corps)

PROFESSIONAL MEMBERSHIPS

- Institute of Operations Research and Management Science (INFORMS)
- Manufacturing and Service Operations Management (MSOM)
- Applied Probability Society (APS)
- Mathematical Programming Society (MPS)

TEACHING

Courses

15.734 (Operations Management) – MIT Executive MBA program, MIT Sloan School of Management, MIT (spring 2011, 2012, 2013, 2015)

15.761 (Introduction to Operations Management) – MBA course, MIT Sloan School of Management, MIT (spring 2011, 2012 and fall 2012, 2014, 2015, 2016)

15.S05 (Risk Management) – MIT Executive MBA & Sloan Fellows programs, MIT Sloan School of Management (spring 2012, 2013, 2015, 2016, 2017)

15.S03, 15.967, 15.767, 15.777 (Healthcare Lab: Introduction to Healthcare Delivery in the U.S. – Market & System Challenges) – MIT Sloan School of Management (fall 2010, fall 2011, 2012, 2014, 2015, 2016)

15.060 (Data, Models, Decisions) – MBA course, MIT Sloan School of Management (fall 2008 and fall 2009)

15.760 (Introduction to Operations Management) – MBA course, MIT Sloan School of Management, MIT (spring 2007, spring 2008)

15.764 (The Theory of Operations Management) – PhD course, MIT Sloan School of Management (part of the Operations Research Center program), MIT (spring 2008, spring 2010, spring 2012)

OR320/520 (Optimization 1) – Undergraduate program of the ORIE Department, Cornell University (summer 2003, summer 2004)

OR522 (Topics in Linear Optimization) – Master of Engineering course, ORIE Department, Cornell University (fall 2003)

OR115 (Introduction to Operations Research) – Freshman year course, ORIE Department Cornell University (spring 2004)

Student Thesis Supervision

PhD Students: Ali Aouad (ORC, 5th year, co-advised with Vivek Farias), Assaf Avrahami (Technion, Israel, co-advised with Yale Herer, graduated in 2012), Fernanda Bravo (Sloan PhD, Graduated in 2015 and Assumed a faculty position in UCLA Anderson School of Management), Daniel Chen (ORC, 4th year student, co-advised with Georgia Perakis), Shi Cong (ORC, Won the Nicholson Student Paper Competition. Graduated in 2012 and assumed a faculty position in the Industrial Engineering Department in Michigan University), Adam El-Machtoub (ORC, Graduated in 2014 and assumed a faculty position in the IEOR Department at Columbia University), Michael Hu (ORC, 3rd year student), Phillip Keller (ORC, co-advised with Georgia Perakis, graduated in 2012, Now at Google), Elisabeth Poulson (ORC, 1st year student, co-advised with Georgia Perakis), Nick Renegar (ORC, 1st year student), Gonzalo Romero (Sloan PhD, Co-supervised with Georgia Perakis. Graduated in 2014 and assumed a faculty position at the Rothman School of Management, University of Toronto), Yaron Shaposhnik (ORC, co-advised with Tom Magnanti, Graduated in 2016. Assumed a faculty position at the Simon School of Business of the University of Rochester), Somya Singhvi (ORC, 2nd year co-advised with Karen Zheng), Joline Ann Villaranda Uichanco (ORC, co-advised with Georgia Perakis, graduated in 2013. Assumed a faculty position at the Ross School of Business, University of Michigan), Shujing Wang (ORC, 5th year student, co-advised with Karen Zheng), Eric Zarybnisky (ORC, co-advised with Tom Magnanti, graduated in summer 2011. Now in the U.S. Air Force).

Master Students: Mariam Al-Meer (LGO), Amine Anoun (ORC, co-advised with Tauhid Zaman), Noa Ben-Zvi (LGO, graduated in 2012), Wongsakorn Chaiwanon (ORC, graduated in 2010, co-advised with David Gamarnik), Phil Cho (ORC, graduated in 2011, co-advised with Tom Magnanti), Benjamin Christensen (LGO, graduated in 2012), Katherine Davis (LGO, graduated in 2016), Sara Dolcetti (LGO, graduated in 2014), Jazmine Furtado (ORC) Yanai Gollani (LGO, graduated in 2013), Jonas Hiltrop (LGO, graduated in 2014), Jordan Hofman (LGO), Yiqun Hu (CDO), Andrew Johnston (LGO, graduated in 2016), John Kessler (ORC, co-advised with Tom Magnanti, graduated in 2012), Dan Kress (LGO, graduated in 2015), Wendi Li (LGO, Graduated in 2015), Yi Yin Ma (LGO student, graduated in 2013), Adam Ryan Marshall (LGO, graduated in 2016), Sean Timothy McNichols (LGO, graduated in 2014), Vaishal Patel (LGO, graduated in 2015), Devon Price (LGO, graduated in 2011), Tinting Rao (CDO, co-advised with Georgia Perakis, graduated in 2008), Ashleigh Royalty Range (LGO, graduated in 2013), Thomas Sanderson (LGO, Graduated in 2014), Matthew Ross Schlanser (LGO, graduated in 2013), Trevor Schwartz (LGO, graduated in 2012), Ryan Shofnos (LGO, graduated in 2015), Jason Stuck (LGO, graduated in 2016), Adam Traina (LGO, graduated in 2013), Liz Ugraph (LGO), Uichanco Joline Ann Villaranda (CDO, co-advised with Georgia Perakis, graduated in 2007), Andrew Vanden Berg (ORC), Kfir Yeshayahu (LGO, graduated 2016), Qian Yu (CDO, graduated in January 2010).

Mentored Undergraduate Students: Luwen Huang (UROP, co-supervised), Katherine Lin (UROP student)

Supervised Postdoctoral Fellows: Aleida Braaksma (2015-), Tim Carnes (2010-2012), Farhad Ghassemi (2009-2011), Kimia Ghobadi (2015-), Danny Segev (2008-2009), David Scheinker (2013-2015. Assumed position at Stanford Children's Hospital), Liron Yedidson (2009-2010), Cecilia Zenteno (2012-2014)

PUBLICATIONS

Theses

"Computing Provably Near-Optimal Policies for Stochastic Inventory Control Models", under the supervision of Robin Roundy and David Shmoys (PhD Thesis)

Refereed Journals

"Translating a Biologic Revolution into an Organizational One", Kimia Ghobadi, Cecilia Zenteno, Adam Marshall, Peter Dunn, Retsef Levi and John Stone, Catalyst, New England Journal of Medicine, 2016

"Revenue Management of Reusable Resources with Advanced Reservations", Yiwei Chen, Retsef Levi and Cong Shi, 2011 (To Appear in *POMS*)

"Provably Near-Optimal Balancing Policies for Stochastic Multi-Echelon Inventory Control Models", Retsef Levi, Robin Roundy and Van Anh Truong, 2006 (To appear in *Mathematics of Operations Research*)

"On the Effectiveness of Uniform Subsidies in Increasing Market Consumption", Retsef Levi, Georgia Perakis and Gonzalo Romero, *Management Science*, Volume 63 (1), pages 40-57, 2017

"The Submodular Joint Replenishment Problem", Maurice Cheung, Adam Elmachtoub, Retsef Levi and David Shmoys, *Mathematical Programming*, Volume 158 (1), pages 207–233, 2016

"Systematic OR Block Allocation in Large Academic Medical Centers", Tim Carnes, Cecilia Zenteno, Retsef Levi, Devon Price, Peter Dunn and Bethany Daily, *Annals of Surgery*, Volume 264 (6), pages 973–981, 2016

"Supply Chain Management and Logistics Models with Online Demand Selection", Adam ElMachtoub and Retsef Levi, *Operations Research*, Volume 64 (2), pages 458-473, 2016

"Near-Optimal Algorithms for Assortment Planning under Dynamic Substitution and Stochastic Demand", Vineet Goyal, Retsef Levi and Danny Segev, *Operations Research*, Volume 64 (1), pages 219-235, 2016

"The Data Driven Newsvendor Problem – New Bounds and Insights", Retsef Levi, Georgia Perakis, Joline Uichanco, *Operations Research,* Volume 63 (6), pages 1294 – 1306, 2015

"From Cost Sharing Mechanisms to Online Selection Problems", Adam Elmachtoub and Retsef Levi, *Mathematics of Operations Research,* Volume 40 (3), pages 542 – 557, 2015

"Nature and Sources of Variability in Surgical Case Duration", Fernanda Bravo, Lynne Ferrari, Retsef Levi and Mike McManus, 2013 *Pediatric Anesthesia,* Volume 25 (10), pages 999 – 1006, 2015

"Pooled Open Blocks Shorten Wait Times for Non-Elective Surgical Cases" Ana C. Zenteno, Tim Carnes, Retsef Levi, Bethany Daily, Devon Price, Sue Moss and Peter Dunn, 2012 *Annals of Surgery,* Volume 262 (1), pages 60 – 67, 2015

"Maintenance and Flight Scheduling of Low Observable Aircraft", Philip Cho, Vivek Farias, John Kessler, Retsef Levi and Thomas Magnanti, 2013 *Naval Research Logistics*, Volume 62 (1), pages 60-80, February 2015

"Technology Subsidies Allocation to Minimize a Good's Market Price", Retsef Levi, Georgia Perakis and Gonzalo Romero, *Operations Research Letters,* Issue 42 (5), pages 367 – 373, 2014

"Matching Supply and Demand via Delayed 2-Phase Distribution at Yedioth Group-Models, Algorithms and IT", Assaf Avrahami, Yale Herer and Retsef Levi *Interfaces*, Volume 44 (5), pages 445–460, September-October 2014; **The paper was awarded the 2013 Daniel H. Wagner Prize for Excellence in Operations Research Practice**

"Maintenance Scheduling for Modular Systems – New Models and Algorithms", Retsef Levi, Tom Magnanti, Jack Muckstadt, Danny Segev and Eric Zarybnisky *Naval Research Logistics*, Volume 61 (6), pages 472–488, September 2014; **The paper was awarded the 2016 *Harold W. Kuhn Award*, an annual prize which recognizes an exceptional paper published in *Naval Research Logistics***

"Approximation Algorithms for Capacitated Stochastic Inventory Systems with Setup Cost", Xiuli Chao, Retsef Levi, Cong Shi and Huanan Zhang, *Naval Research Logistics*, Volume 61 (4), pages 304–319, June 2014

"Efficient Formulations for Multi-Product Construed Pricing under Attraction Demand Models", Phil Keller, Retsef Levi, Georgia Perakis, *Mathematical Programming*, Volume 145 (1-2), pages 223-261, June 2014

"Delay of Transfer from the Intensive Care Unit: A Prospective Observational Study of Incidence, Causes and Financial Impact", Daniel W. Johnson, Ulrich Schmidt, Edward A. Bittner, Benjamin Christensen, Retsef Levi and Richard M. Pino, *Critical Care,* Volume 17: R128, 2013

"On-line Primal-Dual Algorithms for Multi-Item Make-to-Order Inventory Models", Niv Buchbinder, Tracy Kimbrel, Retsef Levi, Konstantin Makarychev and Maxim Sviridenko, *Operations Research*, Volume 61 (4), pages 1014 – 1029, July-August 2013

"Approximation Algorithms for the Stochastic Lot-Sizing Problem", Retsef Levi and Cong Shi, *Operations Research*, Volume 61 (3), pages 593 – 602, May-June 2013; **The paper won the 2009 Nicholson Student Paper Competition**

"NP-Hardness Proof for the Assembly Problem with Stationary Setup and Additive Holding Costs", Retsef Levi and Liron Yedidsion, *Operations Research Letters*, Volume 41 (2), Pages 134–137, March 2013

"Commentary - Driving New Science of Healthcare Delivery: What Does It Take to Make an Impact?", Retsef Levi and Ann Prestipino, *Manufacturing & Services Operations Management (MSOM)*, Volume 14, pages 499-504, Fall 2012; **Invited paper to a special issue on healthcare operations management**

"Modeling the Impact of Changing Patient Transportation System on Perioperative Process Performance in a Large Hospital: Insights from a Computer Simulation Study", Danny Segev, Retsef Levi, Peter Dunn, Warren Sandberg, *Health Care Management Science*, Volume 15 (2), pages 155-169, June 2012

"A Sampling-based Approach to Appointment Scheduling", Mehmet Begen, Retsef Levi and Maurice Queyranne, *Operations Research,* Volume 60 (3), pages 675-681, June 2012

"LP-based Approximation Algorithms for Capacitated Facility Location", Retsef Levi, David Shmoys and Chaitanya Swamy, *Mathematical Programming*, Volume 131 (1-2), pages 365-379, February 2012 (Extended abstract appeared in IPCO 2004)

"Approximation Algorithms for Supply Chain Planning and Logistics Problems with Market Choice", Joseph Geunes, Retsef Levi, Edwin Romeijn and David Shmoys. Mathematical Programming, Volume 130 (1), pages 85-106, November 2011 (Extended abstract appeared in IPCO 2005)

"Adaptive Data-Driven Inventory Control Policies Based on Kaplan-Meier Estimator", Tim Huh, Retsef Levi, Paat Rusmevichientong and Jim Orlin, *Operations Research*, Volume 59(4), pages 929-941, July 2011

"Provably Near-Optimal Approximation Algorithms for Operations Management Models", Retsef Levi, *Tutorials in Operations Research*, Chapter 8, 2010; **Invited paper**

"Provably Near-Optimal LP-Based Policies for Revenue Management of Reusable Resources" Retsef Levi and Ana Radovanovic, *Operations Research*, volume 58 (2), pages 503-507, March-April 2010

"A Model for Understanding the Impacts of Demand & Capacity on Waitlists in a Congested Recovery Room", Tor Schoenmyer, Peter F. Dunn, David Gamarnik; Retsef Levi, David L. Berger, Bethany J. Daily, Wilton C. Levine, and Warren S. Sandberg, *Anesthesiology*, Volume 110 (6), pages 1293-1304, June 2009

"Algorithms for Capacitated Rectangle Stabbing and Lot-Sizing with Joint Set-Up Costs", Guy Even, Retsef Levi, Dror Rawitz, Baruch Schieber, Shimon (Moni) Shahar and Maxim Sviridenko, *ACM Transactions on Algorithms*, Volume 4, Article No. 34, 2008

"Approximation Algorithms for Capacitated Stochastic Inventory Control Models", Retsef Levi, Robin Roundy, David Shmoys and Van Anh Truong, *Operations Research*, volume 56(5), pages 1184-1199, September-October, 2008

"Approximation Algorithms for the Multi-Item Capacitated Lot-Sizing Problem Via Flow-Cover Inequalities", Retsef Levi, Andrea Lodi and Maxim Sviridenko, *Mathematics of Operations Research*, Volume 33 (2), pages 461-474, May 2008

"A 2-Approximation Algorithm for Stochastic Inventory Control Models with Lost-Sales" Retsef Levi, Ganesh Janakiraman and Mahesh Nagarajan, *Mathematics of Operations*

Research, Volume 33 (2), pages 351-374, May 2008; **This paper was awarded the "2008 Optimization Prize for Young Researchers" by the Optimization Society, INFORMS**

"First Constant Approximation Algorithm for the One-Warehouse-Multi-Retailer Problem", Retsef Levi, Robin Roundy, David Shmoys and Maxim Sviridenko. *Management Science*, Volume 54, pages 763–776, April 2008

"Provably Near-Optimal Sampling-Based Policies for Stochastic Inventory Control Models", Retsef Levi, Robin Roundy and David Shmoys, *Mathematics of Operations Research*, Volume 32 (4), pages 821-838, November 2007

"Approximation Algorithms for Stochastic Inventory Control Models", Retsef Levi, Martin Pál, Robin Roundy and David Shmoys, *Mathematics of Operations Research*, Volume 32 (2), pages 284-302, May 2007; **This paper was awarded first prize in the 2004 MSOM Student Paper Competition**

"Primal-Dual Algorithms for Deterministic Inventory Problems", Retsef Levi, Robin Roundy and David Shmoys. *Mathematics of Operations Research*, Volume 31, pages 267-284, February 2006

Refereed Conferences

"Scheduling and Testing", Retsef Levi, Tom Magnanti and Yaron Shaposhnik, MSOM Service SIG 2014

"Modeling and Optimizing Network Costs and Resource Allocation in Healthcare Delivery Systems", Fernanda Bravo, Marcus Braun, Vivek Farias and Retsef Levi, MSOM 2014

"Approximation Algorithms for Capacitated Lot-Sizing Models with Fixed Ordering Cost", Xiuli Chao, Retsef Levi, Cong Shi and Huanan Zhang, MSOM 2013

"Systematic Block Allocation in Academic Medical Centers", Tim Carnes, Bethany Daily, Peter Dunn, Retsef Levi, Devon Price and Cecilia Zenteno, 2013 Healthcare Operations Management SIG, 2013

"Co-payment Allocation in Imperfect Markets", Retsef Levi, Georgia Perakis and Gonzalo Romero, 2013 MSOM Conference, 2013

"Base Stock Policies for Lost-Sales Models, State Space Aggregation and Limiting Transition Probabilities", Joachim Arts, Retsef Levi and Geert-Jan van Houtum, 2013 MSOM Conference, 2013

"Approximation Algorithms for Inventory Problems with Generalized Setup Costs", Maurice Cheung, Adam El-Machtoub, Retsef Levi and David Shmoys, MSOM 2012

"Allocating Subsidies to Minimize a Commodity's Market Price: A Network Design Approach", Retsef Levi, Georgia Perakis and Gonzalo Romero, MSOM 2012

"Contract Designs with Incentive Alignment for Joint Ventures in the Healthcare Industry", Retsef Levi, Georgia Perakis, Cong Shi and Wei Sun, MSOM 2012

"From Cost-Sharing Mechanisms to Online Selection Problems", Adam El-Machtoub and Retsef Levi, MSOM 2012

"Approximation Algorithms for the Multi-Item Lot-Sizing Problem with Non Uniform Capacities", Retsef Levi, Maxim Sviridenko and Liron Yedidsion, MSOM 2012

"Cycle Limited Maintenance Scheduling with Submodular Costs", Retsef Levi, Tom Magnanti, Jack Muckstadt, Danny Segev and Eric Zarybnisky, MSOM 2011

"Revenue Management of Reusable Resources with Advanced Reservations", Retsef Levi and Cong Shi, MSOM 2011

"Regret optimization for stochastic inventory models with spread information", Retsef Levi, Georgia Perakis and Joline Uichanco, MSOM 2011

"Supply Chain Management and Logistics Models with Online Demand Selection", Adam ElMachtoub and Retsef Levi, MSOM 2011

"The Value of Information in a Retailer-Based Distribution Network", Assaf Avrahami, Retsef Levi and Yale Herer, MSOM 2011

"The Data-Driven Newsvendor Problem – New Bounds and Insight, (Extended Abstract) ", Retsef Levi, Georgia Perakis and Joline Uichanco, MSOM 2010

"Maintenance Scheduling for Modular Systems – New Models and Algorithms, (Extended Abstract) ", Retsef Levi, Tom Magnanti and Eric Zarybnisky, MSOM 2010

"Approximation Algorithms for the Stochastic Lot-Sizing Problem, (Extended Abstract) ", Retsef Levi and Cong Shi, MSOM 2009

"Near-Optimal Algorithms for Assortment Planning under Substitution and Stochastic Demand, (Extended Abstract) ", Vineet Goyal, Retsef Levi and Danny Segev, MSOM 2009
"Online Make-to-Order Joint Replenishment Model: Primal-Dual Competitive Algorithms (Extended Abstract) ", Niv Buchbinder, Tracy Kimbrel, Retsef Levi, Konstantin Makarychev and Maxim Sviridenko, SODA 2008, pages 952-961, 2008

"Approximation Algorithms for the Multi-Item Capacitated Lot-Sizing Problem via Flow-Cover Inequalities (Extended Abstract) ", Retsef Levi, Andrea Lodi and Maxim Sviridenko, Proceedings of IPCO 2007, pages 454-468, 2007

"Improved Approximation Algorithms for the One-Warehouse-Multi-Retailer Problem (Extended Abstract) ", Retsef Levi and Maxim Sviridenko, Proceedings of APPROX 2006, pages 188-199, 2006

"Provably Near-Optimal Balancing Policies for Multi-Echelon Stochastic Inventory Control Models", Retsef Levi, Robin Roundy and Van Anh Truong, (Presented in the 2006 Multi-Echelon Conference)

"Provably Near-Optimal Sampling-Based Policies for Stochastic Inventory Control Models (Extended Abstract) ", Retsef Levi, Robin Roundy and David Shmoys, Proceedings of the 38th Annual ACM Symposium on Theory of Computing, pages 739-748, 2006

"Approximation Algorithms for Stochastic Inventory Control Models (Extended Abstract) ", Retsef Levi, Martin Pál, Robin Roundy and David Shmoys, Proceedings of IPCO 2005, pages 306-320

"Inventory and Facility-Location Models with Market Selection (Extended Abstract) ", Retsef Levi, Joseph Geunes, Edwin Romeijn and David Shmoys, Proceedings of IPCO 2005, pages 111-124

"First Constant Approximation Algorithm for the One-Warehouse-Multi-Retailer Problem (Extended Abstract) ", Retsef Levi, Robin Roundy and David Shmoys, Proceedings of SODA 2005, pages 365-374

"Primal-Dual Algorithms for Deterministic Inventory Problems (Extended Abstract) ", Retsef Levi, Robin Roundy and David Shmoys, Proceedings of the 36th Annual ACM Symposium on Theory of Computing, pages 353-362, STOC 2004

"LP-Based Approximation Algorithms for Capacitated Facility Location (Extended Abstract)", Retsef Levi, David Shmoys and Chaitanya Swamy, proceedings of IPCO 2004, pages 206-218

"Facility Location with Service Installation Costs (Extended Abstract) ", David Shmoys, Chaitanya Swamy and Retsef Levi, proceedings of SODA 2004, pages 1081-1090

Submitted Papers

"Changing the patient safety paradigm", Jennifer Stevens, Retsef Levi and Kenneth Sands, 2016 (Submitted to *Journal of Patient Safety*)

"Near-Optimality of Uniform Co-payments for Subsidy Allocation Problems", Gonzalo Romero, Retsef Levi and Georgia Perakis, 2016 (Submitted to *Operations Research* – minor revision requested)

"Real-Time Outpatient Scheduling with Patient Choic", Kimia Ghobadi, Inga Lennes, Retsef Levi, Adam Marshall, Wendi Reib and Cecilia Zenteno, 2016 (Submitted to *MSOM*- Revision requested)

"Greedy-Like Algorithms for Dynamic Assortment Planning Under Multinomial Logit Preferences", Ali Aouad, Danny Segev and Retsef Levi, 2016 (Submitted to *Operations Research*)

"Approximation Algorithms for Dynamic Assortment Optimization Models", Ali Aouad, Retsef Levi and Danny Segev, 2015 (Under second round of revision in *Mathematics of Operations Research*)

"Assortment Optimization Under Consider-then-Choose Choice Models", Ali Aouad, Vivek Farias and Retsef Levi, 2014 (Under second round of revision in *Management Science*)

"The Association Between Transfer Delays in ICU and Increased Hospital Length of Stay", Benjamin Christensen, Sara Dolcetti, Peter Dunn, Retsef Levi, David Scheinker and Uli Schmidth, 2014 (Submitted to Critical Care Medicine - revision requested)

"The Approximability of Assortment Optimization under Ranking Preferences", Ali Aouad, Vivek Farias, Retsef Levi and Danny Segev, 2014 (Submitted to *Operations Research*)

"Scheduling and Testing", Retsef Levi, Tom Magnanti and Yaron Shaposhnik, 2013 (Submitted to *Management Science* – minor revision Requested)

"Mathematical Programming Analysis of a Graph Visiting Problem", Retsef Levi, Tom Magnanti, Danny Segev and Eric Zarybnisky, 2011 (Submitted to *Mathematical Programming* – Revision requested)

"Regret optimization for stochastic inventory models with spread information", Retsef Levi, Georgia Perakis and Joline Uichanco, 2011 (Submitted to *Operations Research* – Revision requested)

Working Papers (Drafts Exist)

"An Empirical Investigation of Risk Drivers for Economically Motivated Food Adulteration in China's Farming Supply Chains", Yasheng Huang, Retsef Levi, Stacy Springs, Shujing Wang and Yanchong (Karen) Zheng, 2017

"A Network Based Risk Measure for Global Food Supply Chains", Amine Anoun, Retsef Levi, and Tauhid Zaman, 2017

"A Data-Driven Approach to Managing Risk in Global Food Supply Chains", Amine Anoun, Retsef Levi, and Tauhid Zaman, 2017

"Impacts of Shift Patterns on Patients' Length of Stay", Rhodes Berube, Peter Dunn, Kimia Ghobadi, Andrew Johnston, Retsef Levi and Walter O'Donnell, 2017

"Optimizing Purchasing and Handling Costs for Supply Chain Procurement", Bradley Genser, Retsef Levi, Georgia Perakis and Gonzalo Romero, 2016

"Process-Driven Discussions in Team-Based Decision Making for Operational Risk Management", Retsef Levi, Shujing Wang and Karen Zheng, 2015

"Risk-Sharing Pricing Contracts in B2B Service Supply Chains", Fernanda Bravo, Gonzalo Romero, Retsef Levi and Georgia Perakis, 2014

"Data-Driven Optimization to Understand Healthcare Network Costs and Resource Allocation", Marcus Braun, Fernanda Bravo, Vivek Farias and Retsef Levi, 2014

"The Selection Problem with Learning Uncertainty", Chen Attias, Retsef Levi and Robert Krauthgamer, 2014

"A Service-Based Discrete Event Simulation Model for Capacity Planning and Design of Patient Flow Policies in Intensive Care Units", David Gamarnik, Retsef Levi, Mike McManus and Tom Wongsakom, 2013

"Base-Stock Policies for Lost-Sales Models: State Space Aggregation and Limiting Transition Probabilities", Joachim Arts, Retsef Levi and Geert-Jan van Houtum, 2013

"The Efficiency of Revenue Sharing Contracts in Joint Ventures in Operations Management", Retsef Levi, Georgia Perakis, Cong Shi and Wei Sun, 2012

"Sampling-Based Algorithms for Airline Revenue Management Problems", Tim Huh, Tiam Hai Lee and Retsef Levi, 2009

"Dynamic Pricing with Learning – State-Space Collapse and Fully Polynomial Time Approximation Scheme", Vivek Farias, Retsef Levi, Jim Orlin and Georgia Perakis, 2008

"New Policies for Stochastic Inventory Control Models - Theoretical and Computational Results", Gavin Hurley, Peter Jackson, Retsef Levi, Robin Roundy and David Shmoys, 2006

Work in Progress

"Systematic Risk Management of the China-Based Manufactured Jerky Treats", Reuben Domike, Retsef Levi, Stacy Springs, Shannon Stewart, Tauhid Zaman and Karen Zheng, 2014

"Intra-day Surgical Scheduling & PACU Patient Flow", Bethany Daily, Peter Dunn, Retsef Levi, Ashleigh Ranger and Cecilia Zenteno, 2013 (Part of the thesis of Ashleigh Range)

"Surgical-Supply Inventory Policies", Noa Ben Zvi, Bethany Daily, Peter Dunn, Retsef Levi, Matthew Schlanser and Cecilia Zenteno (Part of the theses of Matthew Schlanser and Noa Ben Zvi)

"Design Flexibility in Supply Chains – The Power of Graph Expanders", Michael Dinitz, Robert Krauthgamer and Retsef Levi, 2013.

"Analytics for OR Access at a Large Teaching Hospital", Ryan Graue, Vivek Farias, Retsef Levi, Elena Canacar, Brett Simon and Peter Panzica, 2012 (Part of the thesis of Ryan Graue)

"Surgical ICU: Simulation-Based Optimization of Capacity Allocation and Patient Flow", Benjamin Christensen, Retsef Levi, Uli Schmidt, Peter Dunn and Bethany Daily, 2012 (Part of the thesis of Benjamin Christensen)

"The Box Property of Capacitated Stochastic Resource Allocation Problems", Tim Huh, Ganesh Janakiraman, Retsef Levi, Mahesh Nagarajan and Robin Roundy

Case Studies

"Massachusetts General Hospital: Pre-Admission Testing Area (PATA) ", Kelsey McCarty, Jeremie Gallien, Retsef Levi, 2012

INVITED TALKS

"New Approach to Safety & Risk Management in Health Systems"

(INFORMS 2016, Guest Lecture, Stanford University, 2016)

"Analytics in Health Systems"

(MIT Digital Health Conference, 2015)

"Exploration vs. Exploitation: Reducing Uncertainty in Operational Problems"

(Operations Research Center, MIT, 2014; ISyE, Georgia Tech, 2015, Google NYC, 2016, New Directions in Management Science Seminar, MS&E, Stanford University, 2016)

"A Systematic Approach to Addressing Intentional Adulteration of FDA-regulated Food and Drug Products and Ingredients Emanating from Global Supply Chains"

(MIT Sloan Initiative for Health System Innovation, MIT, 2014; Yale School of Management, 2014, Sauder School Business, University of British Columbia, Canada, 2015, MIT LGO Governing Board, 2015; MIT LIDS Lunch Seminar, 2015, ORIE Department Alumni Event, Cornell University, 2016, NY Campus, Cornell University, 2016, MSE OR Seminar, Stanford University, 2016, Crossroads Conference, MIT, 2016)

"Approximation Algorithms for Dynamic Assortment Optimization"

(Weizmann Institute of Science, Rehovot, Israel, 2015)

"Cost and Resource Allocation in Healthcare Networks"

(MSOM, 2014)

"Optimizing and Coordinating Healthcare Networks and Markets"

(Plenary talk in the 2014 SIAM Optimization Conference, 2014; Smith School of Business, Maryland University, 2014; Graduate School of Business, Stanford University, 2014)

"Assortment Optimization for Non-parametric Choice Models"

(Plenary talk in the 2014 ORSIS Conference, Israel, 2014; Center of Applied Math, Cornell University, 2014, Marketing Group, MIT Sloan School of Management, 2016)

"Testing in Scheduling"

(2014 ORSIS, Israel; Weizmann Institute of Science, 2014, Scheduling Workshop, Dagstults, Germany, 2016)

"Optimizing and Coordinating Markets and Networks of Selfish Players"

(Weizmann Institute of Science, 2013)

"System Thinking and Management in Healthcare Delivery Systems"

(Pittsburgh, AAMC Workshop, 2013; Clalit HMO, Israel, 2013)

"Operations Research & Operations Management Applied to Academic Medical Centers"

(Anesthesiology Symposium, 2015; AAMC Webinar 2013, Arizona University, 2013; ORC HC Analytics Conference, MIT, 2013; LBS, London, 2013; MGH, Care redesign team retreat, 2012; Medical School, Vanderbilt University, 2012; ORIE Department, Cornell University, 2012; Operations Management Workshop, Kellogg, Northwestern, 2012, Columbia Medical School, NYC, 2016)

"Matching Supply and Demand via 2-Phase Delayed Distribution at Yedioth Group — Models, Algorithms and IT"

(INFORMS Analytics, 2014; Ben Gurion University of the Negev, Israel, 2013; INFORMS, 2013; ORIE Department, Cornell University, 2012; Wharton, Penn University, 2012, Amazon, Seattle, 2016)

"Low Observable Maintenance Models and Algorithms"

(INFORMS 2012)

"Supply Chain Management with Online Customer Selection"

(Eindhoven Technical University, Netherlands, 2013; Stern School of Business, NYU, 2013; Operations Research Seminar, Tel-Aviv University, Israel, 2012; Department, Michigan University, 2012)

"Approximation Algorithms for Inventory Problems with Generalized Setup Costs"

(MSOM, 2012)

"On the Access-Throughput Spiral Affects in Large Academic Medical Centers"

(INFORMS, 2011)
"Maintenance Scheduling for Modular Systems with Submodular Costs"

(INFORMS, 2011)

"Operations Research & Operations Management Applied to Academic Medical Centers", Joint with Peter Dunn and Peter Slavin (President of MGH)

(American Association of Medical Colleges (AAMC) Conference, Denver, 2011)

"Healthcare Delivery in the U.S. — Challenges and Opportunities"

(LGO, Operating Committee, MIT, 2011; Sloan Alumni Event, 2011 and 2012)

"Revenue Management of Reusable Resources"

(IE&M Department Seminar, Technion, Israel, 2012; UT Dallas, 2011; Kellogg, 2011; Operations research Seminar, MIT, 2011)

"Approximation Algorithms for Multistage Stochastic Control Models in Operations Management (Tutorial)"

(INFORMS, special tutorial cluster, 2010; Special Operation Management Workshop, Beijing, China, 2010)

"Near Optimal Algorithms for Assortment Planning under Dynamic Substitution and Stochastic Demand"

(ISMP 2012, Berlin, Germany; Marketing Group Seminar, Sloan School of Management, MIT, 2011; INFORMS 2010; Technion & Tel Aviv University, Israel, 2009, IBM Watson Research Center 2009)

"Non Parametric Data-Driven Policies for Stochastic Inventory Models"

(INFORMS, Special Tutorial Cluster, 2011; Rothman School of Business, Toronto University, 2011; Fuqua Business School, Duke University, 2009; Columbia Business School, Columbia University, 2009, IESE Business School - University of Navarra Barcelona, Spain, 2009; Marshal School, USC, 2008; Cornell University, Johnson School of Business, 2008; MSOM 2008; IBM, T.J. Watson Research Center, 2008, Operations Research Seminar, Tel-Aviv University, Israel, 2008; Department of Industrial Engineering and Management Science, Technion, Israel, 2008, Ross School of Business, Michigan, 2008; Cornell University, ORIE Department, 2007)

"The On-Line Make-To-Order Joint Replenishment Model"

(INFORMS 2007)

"Flow-Cover-Inequalities and The Multi-Item Capacitated Lot-Sizing Problem"

(ORIE Department, Cornell University, 2007; Department of Industrial Engineering, Technion, Israel, 2007, IPCO 2007; INFORMS 2007)

"Provably Near-Optimal Dual-Balancing Policies for Stochastic Inventory Control Models with Lost-Sales"

(MSOM 2006; INFORMS 2006; MSE Department, Stanford University 2006)

"Provably Near-Optimal Sampling-Based Policies for Stochastic Inventory Control Models"

(INFORMS 2006; Sauder School of Business, University of British Columbia, 2006; The Business School of Chicago University, 2006; Computer Science Department of Columbia University, 2006; Operations Research Seminar, Tel-Aviv University, Israel, 2005; Department of Industrial Engineering and Management Science, Technion, Israel, 2005)

"Approximation Algorithms for Stochastic Inventory Control Models with Correlated and Evolving Demands"

(The Industrial Engineering Department, Tel-Aviv University, Israel, 2007; The 2006 International Symposium of Mathematical programming (ISMP); IBM, Almaden 2006, IPCO 2005, INFORMS 2005, Workshop in Combinatorial Optimization, Oberwolfasch, Germany, 2005)

"Improved Approximation Algorithms for the One-Warehouse Multi-Retailer Problem"

(INFORMS 2006)

"Provably Near-Optimal Policies for Hard Stochastic Inventory Control Models"

(IBM-NYU-Columbia Theory Day, 2005)

"The One-Warehouse Multi-Retailer problem – Improved Approximation Algorithms"

(SODA 2005; INFORMS 2005)

"Inventory & Facility Location Models with Market Selection"

(INFORMS 2005)

"The Joint Replenishment Problem – Primal-Dual Approximation Algorithms"

(INFORMS 2004; STOC 2004)