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### **ACADEMIC APPOINTMENT**

**University of British Columbia, Associate Professor** 2013 – Present  
Sauder School of Business, Operations and Logistics Division

**University of British Columbia, Assistant Professor** 2006 – 2013  
Sauder School of Business, Operations and Logistics Division

### **VISITING APPOINTMENTS**

**University of Chicago, Booth School of Business** 2015  
**Northwestern University, Industrial Engineering and Management Sciences** 2015

### **EDUCATION**

**University of Pittsburgh, PhD in Industrial Engineering** 2002 – 2006  
Advisor: Andrew J. Schaefer, PhD

**Georgia Institute of Technology, MS in Operations Research** 1997 – 1999

**Loyola University Chicago, BS in Mathematics, Summa Cum Laude** 1994 – 1997  
(Minor in Computer Science)

### **JOURNAL PUBLICATIONS**

\* indicates a student or post-doc I co-authored with

1. Shechter SM, Chandler T\*, Skandari MR\*, Zalunardo N. The cost-effectiveness analysis of vascular access referral policies in chronic kidney disease. To appear in *American Journal of Kidney Diseases*.
2. Sabouri A\*, Huh WT, Shechter SM. Screening strategies for patients on the kidney transplant waiting list. To appear in *Operations Research*.
3. Skandari R\*, Shechter SM, Zalunardo N. Optimal vascular access choice for patients on hemodialysis. *Manufacturing and Service Operations Management*, 17(4): 608-619, 2015.
4. Sabouri A\*, Shechter SM, Huh WT. Inspecting a vital component needed upon emergency. *Production and Operations Management*, 24(12): 1839-1851, 2015.
5. Shechter SM, Ghassemi F\*, Gocgun Y\*, Puterman ML. Trading off quick versus slow actions in optimal search. *Operations Research*, 63(2): 353-362, 2015.
6. Nagarajan M, Shechter S. Prospect theory and the newsvendor problem. *Management Science*, 60(4): 1057-1062, 2014.

7. Shechter SM, Skandari MR\*, Zalunardo N. Timing of arteriovenous fistula creation in patients with chronic kidney disease: A decision analysis. *American Journal of Kidney Diseases*, 63(1): 95-103, 2014.
8. Regnier ED, Shechter S. State-space size considerations for disease-progression models. *Statistics in Medicine*, 32(22): 3862-3880, 2013.
9. Icten GZ\*, Shechter SM, Maillart LM, Nagarajan M. Optimal management of a limited number of replacements under Markovian deterioration. *IIE Transactions*, 45(2): 206-214, 2013.
10. Saveh-Shemshaki F\*, Shechter S, Tang P, Isaac-Renton J. Setting sites for faster results: Optimizing locations and capacities of new tuberculosis testing laboratories. *IIE Transactions in Health Systems Engineering*, 2(4): 248-258, 2012.
11. Shechter SM, Huh WT, Slofstra A\*. Simultaneous testing of multicharacteristic components. *Operations Research Letters*, 40(5): 411-415, 2012.
12. Shechter SM. Efficient solution procedures for a class of optimal stopping problems. *Operations Research Letters*, 40(5): 409-410, 2012.
13. Shechter SM. Treatment evolution and new standards of care: implications for cost-effectiveness analysis. *Medical Decision Making*, 31(1): 35-42, 2010.
14. Shechter SM, Alagoz O, Roberts MS. Irreversible treatment decisions under consideration of the research and development pipeline for new therapies. *IIE Transactions*, 42(9): 632-642, 2010.
15. Werker G\*, Saure A\*, French J, Shechter S. The use of discrete-event simulation modelling to improve radiation therapy planning processes. *Radiotherapy and Oncology*, 92(1): 76-82, 2009.
16. Shechter SM, Bailey MD, Schaefer AJ. Replacing nonidentical vital components to extend system life. *Naval Research Logistics*, 55: 700-703, 2008.
17. Shechter SM, Bailey MD, Schaefer AJ. A modeling framework for replacing medical therapies. *IIE Transactions*, 40(9): 861-869, 2008.
18. Shechter SM, Bailey MD, Schaefer AJ, Roberts MS. The optimal time to initiate HIV therapy under ordered health states. *Operations Research*, 56(1): 20-33, 2008.
19. Braithwaite RS, Roberts MS, Chang CCH, Goetz MB, Gilbert CL, Rodriguez-Barradas MC, Shechter S, Schaefer A, Nucifora K, Koppenhaver R, Justice AC. Influence of alternative thresholds for initiating HIV treatment on quality-adjusted life expectancy: A decision model. *Annals of Internal Medicine*, 148(3): 178-185, 2008.
20. Braithwaite RS, Conigliaro J, Roberts MS, Shechter S, Schaefer A, McGinnis K, Rodriguez MC, Rabenek L, Bryant K, Justice AC. Estimating the impact of alcohol consumption on survival for HIV+ individuals. *AIDS Care*, 19(4): 459-466, 2007.
21. Braithwaite RS, Shechter S, Chang CCH, Schaefer A, Roberts MS. Estimating the rate of accumulating drug resistance mutations in the HIV genome. *Value in Health*, 10(3): 204-213, 2007.
22. Braithwaite RS, Shechter S, Roberts MS, Schaefer A, Bangsberg DR, Harrigan PR, Justice AC. Explaining variability in the relationship between antiretroviral adherence and HIV mutation accumulation. *Journal of Antimicrobial Chemotherapy*, 58: 1036-1043, 2006.
23. Shechter SM, Schaefer AJ, Braithwaite RS, Roberts MS. Increasing the efficiency of Monte Carlo cohort simulations with variance reduction techniques. *Medical Decision Making*, 26(5): 550-553, 2006.

24. Bailey MD, Schaefer AJ, Shechter SM. SPAR: stochastic programming with adversarial recourse. *Operations Research Letters*, 34(3): 307-315, 2006.
25. Shechter SM, Bryce CL, Alagoz O, Kreke JE, Stahl JE, Schaefer AJ, Angus DC, Roberts MS. A clinically based discrete-event simulation of end-stage liver disease and the organ allocation process. *Medical Decision Making*, 25(2): 199-209, 2005.
26. Stahl JE, Kong N, Shechter SM, Schaefer AJ, Roberts MS. A methodological framework for optimally reorganizing liver transplant regions. *Medical Decision Making*, 25(1): 35-46, 2005.
27. Alagoz O, Bryce CL, Shechter S, Schaefer A, Chang CCH, Angus DC, Roberts MS. Incorporating biological natural history in simulation models: Empirical estimates of the progression of end-stage liver disease. *Medical Decision Making*, 25(6): 620-632, 2005.

## **CONFERENCE PROCEEDINGS**

- Shechter SM, Braithwaite RS, Schaefer AJ, Roberts MS. Modeling the progression and treatment of HIV. *Proceedings of the 2004 Winter Simulation Conference*, Ingalls RG, Rossetti MD, Smith JS, Peters BA, eds., p. 953-959, 2004.

## **BOOK CHAPTERS**

- Shechter SM. Monte Carlo simulation as an aid for deciding among treatment options. *Encyclopedia of Operations Research and Management Science*.
- Schaefer AJ, Bailey MD, Shechter SM, Roberts MS. Modeling medical treatment using Markov decision processes, Chapter 23 in *Operations Research and Health Care: A Handbook of Methods and Applications*. Brandeau M, Sainfort F, Pierskalla W, eds., Kluwer, Boston, p. 593-612, 2004.

## **GRANTS**

- Social Sciences and Humanities Research Council (SSHRC): Insight Development Grant  
2015-2017  
Role: PI  
Title: Utility and effort in contests
- Michael Smith Foundation for Health Research (MSFHR): Career Investigator Award  
2011-2019  
Title: Optimal timing of medical decisions  
[http://www.msfhr.org/who\\_we\\_fund/archive/2011/Steven\\_Shechter](http://www.msfhr.org/who_we_fund/archive/2011/Steven_Shechter)
- Natural Sciences and Engineering Research Council (NSERC): Discovery Grant  
2012-2017  
Role: PI  
Title: Optimal timing of medical decisions
- Natural Sciences and Engineering Research Council (NSERC): Discovery Grant  
2007-2012  
Role: PI  
Title: Nonhomogeneous Markov decision processes in medical decision making
- Martha Piper Research Fund, UBC  
2009-2010  
Role: Co-PI

Title: Optimal search with application to minimally invasive surgery

- Mathematics of Information Technology and Complex Systems (MITACS): Accelerate Internship Program 2009  
Role: Academic Supervisor  
This grant funded a Masters student for a four-month internship with the Department of Urology at Vancouver General Hospital and the Sauder School of Business at UBC.
- MITACS: Accelerate BC Training Event 2008  
Role: Course developer/instructor  
This grant helped fund a 2-day workshop on “Discrete Event Simulation Modeling in Health Care”
- Canadian Institutes of Health Research (CIHR): New Emerging Team Grant—Access to Quality Cancer Care 2007-2012  
Role: Co-Applicant  
Title: Improving access to quality cancer care using operations research methods
- MITACS: Grant for Scientific Networking Event 2007  
Role: Conference Chair  
This grant helped fund a 2-day summer symposium at UBC on “Operations Research in Health Care”
- Agency for Healthcare Research and Quality (AHRQ): Grant for Health Services Dissertation Research 2005-2006  
Role: PI  
This grant supported my dissertation research on applying Markov decision processes to inform optimal therapy planning for HIV patients.

## **HONORS AND AWARDS**

- Career Investigator Award, Michael Smith Foundation for Health Research
- Early Career Scholar of the Peter Wall Institute for Advanced Studies, UBC
- Finalist, INFORMS Decision Analysis Society student paper competition
- INFORMS Bonder Scholarship for Applied Operations Research in Health Services
- Dean’s Fellowship and Wellington C. Carl Fellowship at University of Pittsburgh
- Gold Award in Information Services Division at United Airlines
- Presidential Fellowships at Georgia Tech and Loyola University Chicago
- Joseph Zajdel Memorial Award for Outstanding Junior, Senior in Mathematics at Loyola University

## **TEACHING EXPERIENCE**

<b>University of British Columbia</b> , Sauder School of Business	
Simulation Modeling (Masters in OR)	2007-Present
Managerial Decision Modeling & Analytics (MBA, PT MBA)	2010-Present
Decision Analysis (Masters in OR)	2016-Present
Markov Decision Processes (PhD)	2010-2012
Logistics and Operations Management (Undergraduate)	2008-2010
Business Statistics (Undergraduate)	2007
Business Analytics for Competitive Advantage (Executive Education)	2012-Present

*Workshops taught:*

<b>University of Chicago</b> , Center for Health and the Social Sciences	2012
Simulation Modeling in Health Care	

**University of Piura, Peru**, National Industrial Engineering Student Conference  
Simulation Modeling with Arena and @Risk

2012

**University of British Columbia**, Centre for Health Care Management  
Discrete Event Simulation Modeling in Health Care ([http://chcm.ubc.ca/2009/08/25/des\\_2009/](http://chcm.ubc.ca/2009/08/25/des_2009/))

2008, 2009, 2011

**Society for Medical Decision Making**, Annual Conference 2002, 2004, 2007, 2011  
Short Courses: Discrete-Event Simulation Modeling (2002, 2007, 2011), Simulation Optimization (2011), Markov Decision Processes – Analytic Methods for Sequential Decisions (2004).

## **STUDENT ADVISING**

### Current:

PhD

- Mona Imanpoor
- Forough Pourhossein

### Past:

PhD

- Mohammad Reza Skandari (2016)
  - Dissertation title: “Optimal treatment planning under consideration of patient heterogeneity and preparation lead-time”
  - Current position: Post-doc, University of Chicago School of Medicine
- Alireza Sabouri (2014, co-advised with Tim Huh)
  - Dissertation title: “Applications of Stochastic Optimization Models in Patient Screening and Blood Inventory Management”
  - Current position: Assistant Professor, Haskayne School of Business, University of Calgary

Post-doc

- Yasin Gocgun (2012, co-advised with Martin Puterman)
- Farhad Ghassemi (2008, co-advised with Martin Puterman)

MSc

- Anyu Slofstra (2013, co-advised with Tim Huh)

Masters of Management in Operations Research (MMOR)

- Nathaniel Horvath and Lu Jia (2016)
  - Project: Truck and shovel resource planning at Silver Standard Mine
- John Cox (2014)
  - Project: Blood inventory planning
- Amanda Yuen (2013)
  - Project: Managing home health capacity
- Sarah Taghipour (2012)
  - Project: Improving access to palliative care in Vancouver
- Fatemeh Shemshaki (MMOR, UBC, 2011)
  - Project: Models for evaluating the location of TB testing facilities in British Columbia
- Gary Yip (MMOR, UBC, 2010)
  - Project: Forecasting end-stage kidney failure and improving patient engagement at the Vancouver General Hospital Renal Unit
- Argelio Santos (MMOR, UBC, 2009)
  - Project: Spinal cord injury patient flow/access to care

- Rachel Lewis (MMOR, UBC, 2009)
  - Project: Forecasting the incidence and economic impact of spinal cord injury: Evaluation of a software tool.
- Candice Chan (MMOR, UBC, 2008)
  - Project: An evaluation of alternative designs for the surgical suite at BC Children's Hospital
  - Project: Nomogram construction for kidney transplant outcomes
- Jing Chen (MMOR, UBC, 2007)
  - Project: The transport of critically ill patients in British Columbia  
This project took second place at the 2008 CORS Practice Prize Competition

#### MBA

- Executive MBA in Health Care
  - Shelly Fleck
    - Project: Evaluation of continuous monitoring of patients at Vancouver General Hospital
  - Laura Fitzgerald
    - Project: Comparison of alternative models of adding surge treatment capacity during the H1NI pandemic flu season of 2009 and 2010
- Full time MBA
  - Stephanie Carew
    - Project: Improving surgical scheduling at BC Children's Hospital
  - Eric Ma
    - Project: Evaluation of the consolidation of facilities departments across four BC health authorities
- Part time MBA
  - Rajendra Upreti
  - Cindy Liu
  - Vania Yuen
    - Project: Review of community health nurse clinical documentation workflow at Evergreen Home & Community Care
  - Amar Grewal
    - Project: Improving the operational efficiency of diagnostic cardiology services through process redesign

#### Student competition advisor

- CORS/SIMUL8 Simulation Competition
  - Chong Chen, Wenhai Huang, Joey Uljevic, Haoyu Xu (2009, first place)
  - Hessam Bavafa, Hamed Hasheminia, Behnam Sharif (2008, third place)
  - Candice Chan, Matthew Nelson, Da Wen Peng, Marianela Pereira (2008, finalists)

#### PhD/MS committee member

- Quynh Doan (PhD student in School of Population and Public Health at UBC)
- Mariel Lavieri (PhD student in Management Science at UBC)
- Alex Qian (PhD student in Management Science at UBC)
- Antoine Saure (PhD student in Management Science at UBC)
- Pooria Asadi (MS student in Forestry at UBC)

#### **INVITED SEMINARS**

- Optimal screening strategies for patients on the kidney transplant waiting list. University of Toronto, Industrial Engineering, 2017.
- Optimal screening strategies for patients on the kidney transplant waiting list. University of Chicago, Booth School of Business, 2015.
- Approximate Dynamic Programming in Health Care: Linear Programming and Simulation Based Approaches. University of Michigan, Industrial and Operations Engineering, 2015.

- Approximate Dynamic Programming in Health Care: Linear Programming and Simulation Based Approaches. University of Cincinnati, Lindner College of Business, 2015.
- The endowment effect over space and time. University of Chicago, Booth School of Business, Center for Decision Research, 2014.
- Operations research in health care. UBC Division of Nephrology Grand Rounds, 2014.
- Optimal screening strategies for patients on the kidney transplant waiting list. UBC Centre for Health Evaluation and Outcome Sciences, 2014.
- Optimal screening strategies of patients on the kidney transplant waitlist. Northwestern University, Department of Industrial Engineering and Management Science, 2012.
- How industrial engineering can help improve health care management. National Industrial Engineering Student Conference, University of Piura, Peru, 2012. (plenary speaker)
- Optimal screening strategies of patients on the kidney transplant waitlist. University of Texas, McCombs School of Business, 2012.
- Optimizing testing and preparation guidelines for dialysis. Northwestern University, Department of Industrial Engineering and Management Science, 2011.
- The optimal timing of arteriovenous fistula preparation: a decision analytic approach. UBC Division of Nephrology Grand Rounds, 2011.
- Optimal search in minimally invasive surgery. Cornell University, School of Operations Research and Information Engineering, 2010.
- Optimal search with application to minimally invasive surgery. University of Iowa, Tippie College of Business, 2010.
- Optimal search with application to minimally invasive surgery. University of Michigan, Industrial and Operations Engineering, 2010.

### **SERVICE TO PROFESSION**

- Editorial Board Member, *Medical Decision Making*, 2013-Current
- Planning Committee, 2013 INFORMS Health Care Conference
- Co-chair, 2013 Health Applications Society student paper competition
- Chair, Health Applications Society, INFORMS, 2012
- Vice-Chair, Health Applications Section, INFORMS, 2011
- Co-chair, joint sessions of the 2012 INFORMS and SMDM annual meetings
- Member, Technical Expert Panel, Agency for Healthcare Research and Quality (AHRQ)
- Academic Co-Chair, Health Services and Policy Research Support Network Steering Council of the Michael Smith Foundation for Health Research
- Conference Chair: “Operating on Health Care: An Operations Research Symposium”; a two-day symposium featuring leading experts in health care operations research; held at UBC on August 16 and 17, 2007 (<http://chcm.ubc.ca/2007/08/16/ophcsymposium/>)
- Reviewer for the journals *Operations Research*, *Management Science*, *Naval Research Logistics*, *Manufacturing and Service Operations Management*, *Interfaces*, *Production and Operations Management*, *Medical Decision Making*, *Health Economics*, *Journal of Critical Care*, *Encyclopedia of Operations Research and Management Science*, *Transportation Science*, *Transportation Research E—Logistics and Transportation Review*
- Reviewer for the 2009, 2010 INFORMS Manufacturing and Service Operations Management student paper competition and 2007 INFORMS Decision Analysis Society student paper competition
- External examiner for PhD comprehensive exam (Saba Vahid, PhD student in Forestry at UBC)
- University examiner for PhD thesis defense (Mehmet Begen, PhD student in Management Science at UBC)
- Session chair, several conferences

### **PROFESSIONAL AFFILIATIONS**

- Institute for Operations Research and the Management Sciences
- Institute of Industrial Engineers

- Society for Medical Decision Making

## **OTHER WORK EXPERIENCE**

- **United Airlines**, Chicago, IL *Senior Analyst in Revenue Management* July 1999 – October 2001
  - Developed C++ simulation program used to test different revenue management booking strategies. Designed and analyzed the simulation experiments
  - Researched and developed algorithm for modifying overbooking levels when passengers get rebooked from canceled flights
  - Developed routing program to find optimal routes on which to put passengers booking through internet channels such as Priceline.com
  - Analyzed various internet companies' proposals to improve United's revenue management practices
- **Automation Associates, Inc.**, San Diego, CA *Simulation Analyst* Summer 1998
  - Developed a simulation model and animation of a distribution center using the SIMAN modeling language and Proof animation software