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Academic Position

Duke University: the Fuqua School of Business, Durham, NC
J.B. Fuqua Professor, July 2019 -
Full Professor, 2015 - 2019
Associate Professor, 2008 - 2015
Assistant Professor, 2003 - 2008

Education

Ph.D., Operations Research Center, Massachusetts Institute of Technology, 2003
B. Eng., Tsinghua University, Beijing, China, July 1998

Publication

- P. Sun and R. M. Freund, (2004) "Computation of Minimum Volume Covering Ellipsoids," *Operations Research*, 52(5), pp. 690-706.
- D.I. Simester, P. Sun and J.N. Tsitsiklis, (2006) "Dynamic Catalog Mailing Policies," *Management Science*, 52(5), pp. 683-696.
- S. Mannor, D.I. Simester, P. Sun and J.N. Tsitsiklis, (2007) "Bias and Variance Approximation in Value Function Estimates," *Management Science*, 53(2), pp. 308-322.
- X. Chen, M. Sim, D. Simchi-Levi and P. Sun, (2007) "Risk Aversion in Inventory Management," *Operations Research*, 55(5), pp. 828-842.
- X. Chen, M. Sim, and P. Sun, "A Robust Optimization Perspective to Stochastic Models," (2007) *Operations Research*, 55(6), pp. 1058-1071.
- X. Chen, M. Sim, P. Sun and J. Zhang, (2008) "A Linear Decision Based Approximation Approach to Stochastic Programming," *Operations Research*, 56(2), pp. 344-357.
- D. Ahipasaoglu, P. Sun and M. Todd, (2008) "Linear Convergence of a Modified Frank-Wolfe Algorithm for Computing Minimum Volume Enclosing Ellipsoids," *Optimization Methods and Software*, 23(1), pp. 5-19,

- P. Sun, L. Yang and F. De Vericourt, (2009) "Selfish Drug Allocation for Containing an International Influenza Pandemic," *Operations Research*, 57(6):1320-1332.
- S. Wang, F. de Vericourt and P. Sun, (2009) "Decentralized Resource Allocation to Control an Epidemic: A Game Theoretic Approach," *Mathematical Biosciences*, 22(1):1-12.
- D. Brown, J.E. Smith and P. Sun, (2010) "Information Relaxation and Duality in Stochastic Dynamic Programs," *Operations Research*, 58(4):785-801.
- G. Lopomo, L. Marx and P. Sun, (2011) "Linear Programming for Mechanism Design: An Application to Bidder Collusion in First Price Auctions," *Review of Economic Design*, 15:177-211.
- X. Chen and P. Sun, (2012) "Optimal Structural Policies for Ambiguity and Risk Averse Inventory and Pricing Models," *SIAM Journal on Control and Optimization*, 50(1):133-146.
- S. Alizamir, F. de Vericourt and P. Sun, (2013) "Diagnostic Accuracy under Congestion," *Management Science*, 59(1):157-171.
- L. Yang, F. de Vericourt and P. Sun, (2013) "Duopoly Competition in Waiting Time with Reference Effect," *Manufacturing & Service Operations Management*, 16(1):119-132.
- K. Johnson, D. Simchi-Levi and P. Sun, (2014) "Managing Scrip Systems," *Operations Research*, 62(3), 524-534.
- S. Alizamir, F. de Vericourt and P. Sun, (2016) "Efficient Feed-In-Tariff Policies for Renewable Energy Technologies," *Operations Research*, 64(1):52-66.
- S. Wang, P. Sun and F. de Vericourt, (2016) "Inducing Environmental Disclosure: A Dynamic Mechanism Design Approach," *Operations Research*, 64(2):371-389.
- P. Sun and F. Tian, (2018) "Optimal Contract to Induce Continued Effort," *Management Science*, 64(9): 4193-4217.
- S. Balsiero, H. Gurkan and P. Sun, (2019) "Multi-agent Mechanism Design without Money," *Operations Research*, 67(5):1417-1436.
- S. Alizamir, F. de Vericourt and P. Sun (2019), "Search under Accumulated Pressure," *Operations Research*, 70(3):1393-1409.
- M. Chen, P. Sun, and Y. Xiao, (2020) "Optimal Monitoring Schedule in Dynamic Contracts," *Operations Research*, 68(5):1285-1314.

F. Tian, P. Sun, and I. Duenyas, (2021) “Optimal Contract for Machine Repair and Maintenance,” *Operations Research*, 69(5):916-949.

P. Cao, F. Tian and P. Sun, (2021) “Comment on 'Optimal Contract to Induce Continued Effort',” *Management Science*, 68(1):796-808.

Y. Liang, P. Sun, R. Tang and C. Zhang, (2022) “Efficient Resource Allocation Contracts to Reduce Adverse Events,” *Operations Research*, 71(5):1889-1907.

C. Lin, K. Shang and P. Sun, (2022) “Wait-Time Based Pricing for Queues with Customer-Chosen Service Times,” *Management Science*, 69(4):2127-2146.

P. Cao, P. Sun and F. Tian, (2023) “Punish Underperformance with Suspension – Optimal Dynamic Contracts in the Presence of Switching Cost,” *Management Science*, 70(5):3020-3037.

S. Wang, F. de Vericourt and P. Sun, (2024) “Audit and Remediation Strategies in the Presence of Evasion Capabilities,” 72(5):1843-1860.

Working papers

F. Tian, F. Zhang, P. Sun and I. Duenyas, “Funding the Real Deal -- Dynamic Moral Hazard with Adverse Selection,” under revision, 2024.

X. Wei, Z. Huang, P. Sun and L. Yang, “Information Design and Communication in Cournot Competition,” under revision, 2024.

S. Wang, Y. Liang and P. Sun, “Dynamic Contract Design with Learning,” under revision, 2024.

C. Lin, K. Shang and P. Sun, “Wait-Time-Based Control of Single-Server Queues,” working paper, 2024.

C. Lin, K. Shang and P. Sun, “Dynamic Pricing and Release Time Control for Service Systems,” submitted, 2024.

P. Lopomo, D. Ridley, P. Sun and C. Xu, “Optimal Conditional Drug Approval,” submitted, 2024.

C. Xu, D. Ridley and P. Sun, “Optimal Push and Pull Funding for Global Health,” submitted, 2025.

M. Chang, A. Makhdoumi and P. Sun, “Controlling Epidemics: The Value of Information Design,” under revision, 2023.

F. Tian, F. Zhang, P. Sun and I. Duenyas, “Dynamic Moral Hazard with Adverse Selection – probation, sign-on bonus and delayed payment,” 2023.

Permanent working papers

M. Chen, P. Sun and Z. Wan, “Matching Supply and Demand with Mismatch-Sensitive Players,” 2020.

A. Belloni, B. Chen and P. Sun, “Structures of Optimal Policies in Dynamic Mechanism Design with One Agent,” 2016.

X. Chen, M. Sim, P. Sun and J. Zhang, “A Tractable Approximation of Stochastic Programming via Robust Optimization,” 2006.

X. Chen, M. Sim, D. Simchi-Levi and P. Sun, “Risk Averse Inventory Management,” 2004.

Grant

Co-PI, National Science Foundation #SES-0849349, “Applied Mechanism Design,” 2009-2011. (PI: Leslie Marx, Co-PIs: A. Belloni, G. Lopomo, P. Sun.)

Award

2018 ENRE Best Publication – Environment and Sustainability: Wang, Sun, and de Vericourt (2016), “Inducing Environmental Disclosure: A Dynamic Mechanism Design Approach,” *Operations Research*, 64(2).

2019 ENRE Best Publication – Environment and Sustainability (honorable mention): Alizamir, de Vericourt, and Sun (2016), “Efficient Feed-In-Tariff Policies for Renewable Energy Technologies,” *Operations Research*, 64(1).

Professional Activities

Department Editor, *Management Science*, 2023 -

Associate Editor, *Operations Research*, 2006 - 2023

Associate Editor, *Management Science*, 2012 - 2023

Associate Editor, *Service Science*, 2019 - 2023

Referee, *Operations Research*, *Management Science*, *Econometrica*, *SIAM Journal on Optimization*, *Mathematics of Operations Research*, *Mathematical Programming*, *Journal of Machine Learning Research*, *Manufacturing & Service Operations Management*, *SIAM Journal on Control and Optimization*, *Journal of Optimization Theory and Application*, *Journal of Marketing Research*, *Computational Optimization and Applications*, *Decision Analysis*, *IEEE Transactions on Neural Network*, *IEEE Transactions on Automatic Control*, etc.

Management Science Meritorious Service Award, 2011, 2014, 2015

Operations Research Meritorious Service Award, 2012

Sponsored Sessions Chair, INFORMS Annual Meeting, Charlotte, 2011
NSF Panelist, 2011
Co-Chair, MSOM Sustainability SIG Conference, INSEAD, 2013
Discussant, MSOM Sustainability SIG Conference, INSEAD, 2013
Discussant, MSOM Sustainability SIG Conference, Toronto, 2015
Panelist, Hong Kong Research Grant Council (RGC), 2019-
Judge, Decision Analysis Best Paper Award, 2019

PhD Student Supervision

Liu Yang, “Application of Game Theory Analysis in Epidemiology and Service Management,” Duke Decision Sciences, 2010. (co-advisor; first appointment: Tsinghua University, China.)

Saed Alizamir, “Essays on Optimal Control of Dynamic Systems with Learning,” Duke Decision Sciences, 2013. (co-advisor; first appointment: Yale University; current appointment: University of Virginia)

Kai Wang, “Heuristics for Inventory Systems Based on Quadratic Approximation of L^1 -Convex Value Functions,” Duke FSB, 2014. (first job: data scientist at Electronic Arts, Inc.)

Huseyin Gurkan, Duke Decision Sciences, 2019 (first appointment: ESMT, Berlin)

Mingliu Chen, Duke Decision Sciences, 2020 (first appointment: Associate Research Scientist at Columbia University; current appointment: UT Dallas)

Chen-An Lin, Duke Operations Management, 2023 (co-advisor, first appointment: Purdue University)

Minjun Chang, Duke Decision Sciences, 2023 (co-advisor, first appointment: Bain&Company)

Chenxi Xu, Duke Decision Sciences (current)

Jinze Cui, Duke Decision Sciences (current)

PhD Thesis Committee Member

Gavin Taylor, “Feature Selection for Value Function Approximation,” 2011. (Duke Computer Science.)

Shouqiang Wang, “Essays on Individual Incentives and Private Information,” 2011. (Duke Decision Sciences.)

Alvaro Mendoza, “Decision Models for Corporate Sustainability,” 2013. (Duke Decision Sciences.)

Bo Zhou, “Family Plans: Market Segmentation with Non-Linear Pricing,” 2014. (Duke Marketing.)

Zhankun Sun, “Priority Scheduling of Jobs with Hidden Types,” 2014. (University of

North Carolina Chapel Hill, Operations Research.)

Yiting Deng, “A Household Level Model of Television Viewing with Implications for Advertising Targeting,” 2015. (Duke Marketing.)

Lu Huang, “Responsible Sourcing and Supply Chain Risk Management,” 2015. (Duke Operations Management.)

Jongsoo Hong, “Optimal Capital Requirements in Financial Networks with Fire Sales,” 2016. (Duke Decision Sciences.)

Ruoyu Wang, “Essays on Dynamic Tournaments,” 2017. (Duke Decision Sciences.)

Yue Zhang, “Global Supply Chain Management with Advanced Information and Production Technologies,” 2017. (Duke Operations Management.)

Van Vinh Nguyen, “Essays on Online Decisions, Model Uncertainty, and Learning,” 2017. (Duke Decision Sciences.)

Sajad Modaresi, “Dynamic Clustering and Assortment Personalization,” 2018. (Duke Operations Management.)

Chengyu Wu, “Effective Heuristics for Dynamic Pricing and Scheduling Problems with High Dimensionality,” 2019. (Duke Operations Management.)

Yunke Mai, “Analytical Models for Strategic Decisions in Settings with Asymmetric Information,” 2019. (Duke Decision Sciences.)

Chen Chen, “Performance Analysis in Large-Scale Stochastic Dynamic Programs,” 2020. (Duke Decision Sciences.)

Feifan Zhang, “Essays on Dynamic Incentives,” 2022. (Duke Economics)

Invited Presentations

- University of Michigan, April 2025 (scheduled)
- Soochow University online seminar, January 2025
- University of Miami, November 2024
- City University of Hong Kong, June 2024
- Chinese University of Hong Kong, June 2024
- Hong Kong Polytechnic University, June 2024
- Shanghai University of Finance and Economics, June 2024
- Tsinghua Mostly OM Workshop, Tsinghua University, May 2024
- Washington University, St. Louis, May 2024
- POMS-HK International Conference (keynote speaker), January 2024
- Purdue Operations Symposium (keynote speaker), September 2023
- University College London, August 2023
- Hong Kong University, Summer Workshop on Operations Management, June 2023
- Tsinghua University, May 2023
- University of Colorado, Boulder, March 2023

- 17th ICSSSM, November 2022
- Rutgers University (MSIS), December 2021
- Chinese University of Hong Kong (DSE), August 2021
- Online Seminar on Mathematical Foundations of Data Science, August 2021
- Rutgers University (SCM), April 2021
- University of California, Riverside, October 2020
- Purdue University, October 2020
- New York University, December 2019
- University of Illinois Urbana-Champaign, September 2019
- Tutorial, POMS International Conference, Tianjin, China, June 2019
- Hunan University, Changsha, China, June 2019
- Hong Kong University of Science and Technology, May 2019
- Stanford University, April 2019
- University of California Los Angeles, September 2018
- 15th ICSSSM (keynote speech), July 2018
- University of Southern California, April 2018
- University of Texas, Dallas, September 2017
- Fuqua Brown Bag seminar, August 2017
- University of Chicago, March 2017
- MIT, March 2017
- Northwestern University, October 2016
- Yale University, September 2016
- Shanghai Jiaotong University, July 2016
- Tsinghua University, June 2016
- Southwestern University of Finance and Economics, Chengdu, China, June 2015
- Beijing Foreign Studies University, June 2015
- University of Hong Kong, March 2015
- Tsinghua MostlyOM Workshop, Tsinghua University, Beijing, June 2014
- University of Minnesota, February 2014
- Tsinghua MostlyOM Workshop, Tsinghua University, Beijing, May 2013
- London Business School, March 2013
- University College London, March 2013
- NYU Stern School of Business, New York, March 2012
- UNC, Chapel Hill, April 11, 2011
- University of Illinois, Urbana-Champaign, March 11, 2010
- University of Michigan, An Arbor, February 24, 2010
- University of British Columbia, Vancouver, Canada, January 18, 2010
- Columbia University, New York, November 24, 2009
- National Singapore University, Singapore, May 2008
- Tsinghua University, Beijing, China, May 2008
- NYU Stern School of Business, New York, November 2007
- University of North Carolina at Chapel Hill, November 2003

- University of Western Ontario, Texas A&M University, University of Florida, University of Chicago, Duke University, Queens University and University of Iowa, January-February 2003

Teaching

Decision Models, core course, Daytime MBA, and Weekend, Cross Continent, Duke-Goethe EMBA, GEMBA, MQM, MMS:DKU, MMS:FOB, MSQM:HA, , MSQM:BA and MSQM:ABA programs, 2003-2009, 2015-.

Strategic Modeling and Business Dynamics, MBA elective, 2010-2014.

Data-Driven Decision Making, Fuqua Executive Education, 2018-2020.

Decision Making, Duke Corporate Education, 2021.

Dynamic Programming and Optimal Control, PhD course, 2005-2018 (approximately every other year).

Global Academic Travel Experience (GATE), MBA elective, 2010, 2012.

Teaching Award, MSQM:ABA *Decision Models*, 2024

Service at the Fuqua School of Business

Director of Graduate Studies, 2021-2024

Distinguished Professor Committee, 2020-2022

Senior Review Committee (elected by faculty), 2020-2022

Curriculum Committee, 2019-2021

Decision Sciences PhD Coordinator, 2019-2020

Strategic Planning Committee, 2018

Online MQM Committee, 2018

Decision Sciences Area Coordinator, 2013-2016

Curriculum Committee, 2011-2013

Honor Code Committee, 2010-2011

China Strategy Committee, 2010-2011

Dean's Advisory Committee (elected by faculty), 2008 - 2010

Ad hoc promotion, appointment, and PhD admission committees.

Service at Duke University

TA Training committee, 2024-

Climate & Sustainability Task Force – Climate & Data Science Working Group, 2020-2021

Academic council, 2022-2024