



Manufacturing & Service Operations Management

Publication details, including instructions for authors and subscription information:
<http://pubsonline.informs.org>

MSOM Society Student Paper Competition: Abstracts of 2025 Winners

To cite this article:

(2026) MSOM Society Student Paper Competition: Abstracts of 2025 Winners. *Manufacturing & Service Operations Management* 28(3):xvii–xix. <https://doi.org/10.1287/msom.2026.studentabs.v28.n3>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact permissions@informs.org.

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

Copyright © 2026, INFORMS

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes. For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

MSOM Society Student Paper Competition: Abstracts of 2025 Winners

<https://doi.org/10.1287/msom.2026.studentabs.v28.n3>

Copyright: © 2026 INFORMS

Abstract. The journal is pleased to publish the abstracts of the four finalists of the 2025 Manufacturing and Service Operations Management Society’s student paper competition. The 2025 prize committee was chaired by Georgina Hall (INSEAD), Jonas Oddur Jonasson (Massachusetts Institute of Technology), and Vasiliki Kostami (HEC Paris). The judges were Adem Orsdemir, Agni Orfanoudaki, Alex Jacquillat, Alp Akcay, Alp Sungu, Alper Nakkas, Amrita Kundu, Antoine Desir, Antoine Feylessoufi, Anton Braverman, Anton Ovchinnikov, Anyan Qi, Arian Aflaki, Arthur Delarue, Arzum Akkas, Ashish Kabra, Bahar Taskesen, Benjamin Legros, Bilal Gokpinar, Bin Hu, Bing Bai, Bob Batt, Bora Keskin, Brent Moritz, Christopher Chen, Cuihong Li, Daniel Chen, Daniel Freund, Daniela Hurtado-Lange, Dawson Kaaua, Dimitrios Andritsos, Divya Singhvi, Ella Segev, Elodie Adida, Ersin Korpeoglu, Esmaeil Keyvanshokoo, Faidra Monachou, Fanyin Zheng, George Chen, Gian-Gabriel Garcia, Gonzalo Romero, Guangwen Crystal Kong, Guoming Lai, Hamsa Bastani, Hannah Li, Heikki Peura, Hessam Bavafa, Holly Wiberg, Hongyao Ma, Ho-Yin Mak, Huseyin Gurkan, Ilgin Dogan, Ioannis Stamatopoulos, Itir Karaesmen, Ivana Ljubic, Jackie Baek, James Siderius, Jean Pauphilet, Jiahua Wu, Jiankun Sun, Jiaru Bai, Jiayi Yu, Jing Dong, Jing Wu, Jinglong Zhao, John Silberholz, Jose Guajardo, Julia Yan, Julien Grand-Clement, Kenan Arifoglu, Kostas Bimpikis, Kris Ferreira, Leonard Boussioux, Laura Wagner, Lennart Baardman, Levi DeValve, Lin Fan, Lina Song, Luyi Gui, Luyi Yang, Mazhar Arikan, Mehmet Ayvaci, Melvin Drent, Mengzhenyu Zhang, Miao Bai, Michael Lingzhi Li, Michelle Kinch, Mihalis Markakis, Mika Sumida, Ming Hu, Mohsen Bayati, Mostafa Rezaei, Nan Liu, Nan Yang, Neha Sharma, Nektarios Oraipoulos, Nikos Trichakis, Nil Karacaoglu, Nitin Bakshi, Nur Sunar, Olga Perdikaki, Omar Mouchtaki, Omer Karaduman, Onesun Steve Yoo, Ovunc Yilmaz, Ozge Sahin, Panos Markou, Philip Zhang, Philipp Cornelius, Philippe Blaettchen, Pnina Feldman, Qiuping Yu, Raghav Singal, Rim Hariss, Rouba Ibrahim, Ruslan Momot, Ruth Beer, Ruxian Wang, Ryan Cory-Wright, Saed Alizamir, Sajjad Najafi, Sanjith Gopalakrishnan, Santiago Gallino, Sarah Yini Gao, Scott Rodnitz, Sebastien Martin, Flore Sentenac, Serdar Simsek, Serhan Ziya, Seyed Emadi, Sheng Liu, Shouqiang Wang, Siddharth Singh, Sidika Tunc Candogan, Simone Marinesi, So Yeon Chun, Somya Singhvi, Song-Hee Kim, Stefanus Jasin, Stephen Leider, Suresh Muthulingam, Tamer Boyaci, Tian Chan, Tianyi Peng, Tim Kraft, Tolga Dizdarer, Tom Tan, Vahideh Manshadi, Velibor Mistic, Wanning Chen, Will Ma, Woonam Hwang, X. Y. Han, Xiaojia Guo, Xiaoshuai Fan, Xiaoyang Long, Xinyu Liang, Yangfang Helen Zhou, Yao Cui, Yasemin Limon, Yenting Lin, Yiangos Papanastasiou, Yi-Chun Akchen, Ying-Ju Chen, Yixin Iris Wang, Yuan-Mao Kao, Yue Hu, Yuexing Li, Yuqian Xu, Zhaohui (Zoey) Jiang, Zhaowei She, Zhe Liu, Zhen Lian, and Zumbul Atan.

The 2025 prize winners are as follows:

First Prize

Optimizing the Path Toward Plastic-Free Oceans
 Baizhi Song, London Business School

Second Prizes (in alphabetical order according to the author’s last name)

Rented Today, Bought Tomorrow: Buyout Pricing in the Circular Economy
 Borja Apaolaza, The Wharton School, University of Pennsylvania

The Impact of Information-Granularity and Prioritization on Patients’ Care Modality Choices
 Lin Zang, Stanford Graduate School of Business

Finalist

The NHS Blended Payment Scheme: Incentive Issues and Optimal Reform
 Sara Mohammadi, UCL School of Management, University College London

Optimizing the Path Toward Plastic-Free Oceans

Baizhi Song

London Business School, bsong@london.edu

Coauthors: Dick den Hertog, University of Amsterdam; Jean Pauphilet, London Business School; Yannick Pham, The Ocean Cleanup; Bruno Sainte-Rose, The Ocean Cleanup

Advisor: Jean Pauphilet, London Business School

Increasing ocean plastic pollution is irreversibly harming ecosystems and human economic activities. We partner with a nonprofit organization and use optimization to help clean up oceans from plastic faster. Specifically, we optimize the route of their plastic collection system in the ocean to maximize the quantity of plastic collected over time. We formulate the problem as a longest path problem in a well-structured graph. However, because collection directly impacts future plastic density, the corresponding edge lengths are nonlinear polynomials. After analyzing the structural properties of the edge lengths, we propose a search-and-bound method, which leverages a relaxation of the problem solvable via dynamic programming and clustering, to efficiently find high-quality solutions (within 6% optimal in practice) and develop a tailored branch-and-bound strategy to solve it to provable optimality. On one year of ocean data, our optimization-based routing approach increases the quantity of plastic collected by more than 60% compared with the current routing strategy, hence speeding up the progress toward plastic-free oceans.

Rented Today, Bought Tomorrow: Buyout Pricing in the Circular Economy

Borja Apaolaza

The Wharton School, University of Pennsylvania, apaolaza@wharton.upenn.edu

Coauthors: Gerard Cachon, The Wharton School, University of Pennsylvania; Santiago Gallino, The Wharton School, University of Pennsylvania; Antonio Moreno, Harvard Business School

Advisor: Santiago Gallino, The Wharton School, University of Pennsylvania

Online rental platforms that allow customers to purchase rented goods present a complex pricing challenge: setting buyout prices that balance immediate sales revenue with future rental income, accounting for item-specific factors such as condition, popularity, and customer preferences. In this paper, we develop, estimate, and validate a data-driven framework to inform buyout prices in this setting. Leveraging a Markov decision process, our framework assesses individual item value based on rental demand, product attrition, and customer

purchase likelihood. We use real-world data from a leading fashion rental company to demonstrate that our methodology significantly improves profitability compared with existing practices and alternative benchmarks. We estimate that the proposed pricing policy increases earnings by 3.1% over the company's current practice. Our analysis also shows that operating a rental-only business model leaves revenue opportunities untapped, underscoring the strategic value of buyout options in managing inventory and generating additional income.

The Impact of Information-Granularity and Prioritization on Patients' Care Modality Choices

Lin Zang

Simon Business School, University of Rochester

Current affiliation: Stanford Graduate School of Business, lzang@stanford.edu

Coauthors: Yue Hu, Stanford Graduate School of Business; Ricky Roet-Green, Simon Business School, University of Rochester; Shujing Sun, Naveen Jindal School of Management, University of Texas at Dallas

Advisors: Ricky Roet-Green, Simon Business School, University of Rochester; Yue Hu, Stanford Graduate School of Business

The past few years have witnessed a significant expansion in telemedicine adoption by healthcare providers. On the one hand, telemedicine has the potential to increase patients' access to medical appointments. On the other hand, because of the limitations of remote diagnostic and treatment methods, telemedicine may be insufficient for patients' treatment needs and may necessitate subsequent in-person follow-up visits. To better understand this trade-off, we model the healthcare system as a queueing network providing two types of service: telemedicine and in-person consultations. We assume that an in-person visit guarantees successful treatment, whereas a telemedicine visit may fail to meet the patient's treatment needs with a probability that is contingent on individual patient characteristics. We formulate patients' strategic choices between these care modalities as a queueing game and characterize the game-theoretic equilibrium and the socially optimal patients' choices. We further examine how improving patients' understanding of their telemedicine suitability through predictive analytics at the online triage stage affects system performance. We find that increasing information granularity maximizes the stability region of the system but may not always be optimal in reducing the average waiting time. This limitation, however, can be overcome by simultaneously deploying a priority rule that induces the social optimum under specific conditions. Finally, leveraging real-world data from a

large academic hospital in the United States, we perform a comprehensive case study that encompasses both the development of a prediction model for in-person follow-up needs and the implementation of effective information provision and prioritization strategies.

The NHS Blended Payment Scheme: Incentive Issues and Optimal Reform

Sara Mohammadi

UCL School of Management, University College London,
sara.mohammadi.22@ucl.ac.uk

Coauthors and advisors: Kenan Arifoglu, UCL School of Management, University College London; Bilal Gokpinar, UCL School of Management, University College London

The National Health Service in England introduced the blended payment scheme for emergency care in 2019 as a mixed prospective payment model that combines fixed lump-sum payments under block contracts with variable activity-based payments under payment by results (PbR). Under this scheme, hospitals receive a fixed lump-sum payment at the start of the year, based on their planned activity or readiness, and a variable payment at year-end that adjusts for differences between planned and actual activity scaled by a variable

rate but capped by break-glass provisions that limit extreme financial adjustment. We develop a game-theoretic model to analyze hospitals' treatment cost and planned activity decisions under the blended payment, considering information asymmetry between hospitals and the regulator. We show that the blended payment scheme offers a middle ground and improves upon block contracts and PbR as validated by our empirical analysis. However, it fails to fully align hospital incentives for cost reduction and readiness. We identify three key limitations: (i) information asymmetry makes it difficult for the regulator to set the appropriate variable rate, (ii) break-glass provisions may weaken hospital incentives for readiness, and (iii) hospitals may face long-term budget deficits. To address these issues, we propose a modified blended payment that retains the fixed payment but reforms the variable payment by (i) setting the variable rate at 100%, (ii) adjusting payments based on deviations from average actual activity across all hospitals rather than each hospital's own actual activity, and (iii) eliminating break-glass provisions. Our proposed payment model aligns hospital behavior with the social optimum and ensures a balanced long-term budget.