

# Holly Wiberg

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<b>Academic Appointment</b>	<b>Carnegie Mellon University, Heinz College</b> , Pittsburgh, PA Assistant Professor of Public Policy and Operations Research, Fall 2023 – Present.
<b>Education</b>	<b>Massachusetts Institute of Technology</b> , Cambridge, MA PhD in Operations Research, May 2022.  <b>Cornell University, College of Engineering</b> , Ithaca, NY BS (Summa Cum Laude) in Operations Research and Engineering, May 2016.  <b>University of Edinburgh</b> , Edinburgh, Scotland Semester Abroad, May 2015.
<b>Research Areas</b>	Operations Research, Healthcare, Machine Learning, Artificial Intelligence, Optimization, Analytics
<b>Affiliations</b>	CMU-NIST AI Measurement Science & Engineering Cooperative Research Center (AIMSEC) Block Center for Technology and Society
<b>Publications</b>	Maragno, D., Wiberg, H., Bertsimas, D., Bilber, S. I., den Hertog, D., & Fajemisin, A. (2023) Mixed-Integer Optimization with Constraint Learning. <i>Operations Research</i> 73(2), 1011-1028.  Luckhurst, C., Wiberg, H., Masiakos, P., ... & Bertsimas, D. (2023). Pediatric Cervical Spine Injury Following Blunt Trauma in Children Younger Than 3 Years Old; A Multi-Center Follow Up Study and a Novel Prediction Model. <i>JAMA Surgery</i> 158(11), 1126-1132.  Soenksen, L., Ma, Y., Zeng, C., Boussioux, L., Villalobos Carballo, K., Na, I., Wiberg, H., Li, M., Fuentes, I., & Bertsimas, D. (2022). Integrated Multimodal Artificial Intelligence Framework for Healthcare Applications. <i>npj Digital Medicine</i> , 5, 149.  Bertsimas, D., Margonis, G. A., Huang, Y., Andreatos, N., Wiberg, H., Ma, Y., ... Wolfgang, C. L. Towards an Optimized Staging System for Pancreatic Ductal Adenocarcinoma: A Clinically Interpretable, Artificial Intelligence-Based Model. <i>JCO Clinical Cancer Informatics</i> , 5, 1220-1231.  Wiberg, H., Yu, P., Montanaro, P., Mather, J., Birz, S., Schneider, M., & Bertsimas, D. (2021). Prediction of Neutropenic Events in Chemotherapy Patients: A Machine Learning Approach. <i>JCO Clinical Cancer Informatics</i> , 5, 904–911.  Bertsimas, D., Borenstein, A., Mingardi, L., Nohadani, O., Orfanoudaki, A., Stellato, B., Wiberg, H., Sarin, P., Varelmann, D., Estrada, V., Macaya, C., & Gil, I. N. (2021). Personalized Prescription of ACEI/ARBs for Hypertensive COVID-19 Patients. <i>Health care management science</i> , 1-17.  Bertsimas, D., Boussioux, L., Cory-Wright, R., Delarue, A., Digalakis, V., Jacquillat, A., Kitane, D.L., Lukin, G., Li, M.L., Mingardi, L., Nohadani, O., Orfanoudaki, A., Papalexopoulos, T., Paskov, I., Pauphilet, J., Lami, O.S., Stellato, B., Bouardi, H.T., Villalobos Carballo, K., & Zeng, C. (2021). From predictions to prescriptions: A data-driven response to COVID-19. <i>Health care management science</i> , 1-20.

	<p>Bertsimas, D., Lukin, G., Mingardi, L., Nohadani, O., Orfanoudaki, A., Stellato, B., Wiberg, H., Gonzalez-Garcia, S., Parra Calderón, C.L., The Hellenic COVID-19 Study Group, Robinson, K., Schneider, M., Stein, B., Estirado, A., a Beccara, L., Canino, R., Dal Bello, M., Pezzetti, F., &amp; Pan, F. (2020). COVID-19 mortality risk assessment: An international multi-center study. <i>PLOS One</i>, 15(12), e0243262.</p> <p>Bertsimas, D., &amp; Wiberg, H. (2020). Machine learning in oncology: Methods, applications, and challenges. <i>JCO Clinical Cancer Informatics</i>, 4, 885-894.</p> <p>Bertsimas, D., Orfanoudaki, A., &amp; Wiberg, H. (2020). Interpretable clustering: an optimization approach. <i>Machine Learning</i>, 110(1), 89-138.</p> <p>Bertsimas, D., Masiakos, P. T., Mylonas, K. S., &amp; Wiberg, H. (2019). Prediction of cervical spine injury in young pediatric patients: an optimal trees artificial intelligence approach. <i>Journal of pediatric surgery</i>, 54(11), 2353-2357.</p> <p>Jian, N., Freund, D., Wiberg, H. M., &amp; Henderson, S. G. (2016). Simulation optimization for a large-scale bike-sharing system. In <i>2016 Winter Simulation Conference (WSC)</i>(pp. 602-613). IEEE.</p>
<b>Under Review</b>	<p>Raman, N., Wiberg, H. (2025). Assortment Optimization for Patient-Provider Matching. <i>arXiv. Under review for the 2025 ACM Conference on Economics and Computation</i>.</p> <p>Wiberg, H., Dai, T., Lam, H., Kulkarni, R. (2025). Synergizing Artificial Intelligence and Operations Research: Perspectives from INFORMS Fellows on the Next Frontier. <i>Under review at INFORMS Journal on Data Science</i>.</p>
<b>Working Papers</b>	<p>Jelic, B., Kalra, G., Orfanoudaki, A., Wiberg, H. (2025). From Prediction to Policy: AI-Enabled Decision-Making in Fertility Treatment. <i>Under review for MSOM Annual Conference</i>.</p> <p>Yao, X., Padman, R., Sherahadeh, K., Wiberg, H. (2025). Can LLMs Support Medical Knowledge Imputation? An Evaluation-Based Perspective. <i>Under review for AMIA Annual Conference</i>.</p> <p>Verma, S., Tayur, S., Wiberg, H., Zhu, W. (2025). From Data to Dose: Personalized Dosing with Data Generation and Expert Feedback.</p> <p>Neha, Wiberg, H., Zhang, P. (2025). Tactical planning of school bus operations in potential delays.</p> <p>Wiberg, H., &amp; Barrett, S. (2024). Optimizing Access to Primary Care.</p> <p>Brooks, N., Koyle, C., Wiberg, H. (2025). AI and the Rural Healthcare Divide: Missing the Last Mile.</p>
<b>Pre-prints</b>	<p>Waskom, M. L., Tan, K., Wiberg, H., Cohen, A. B., Wittmerhaus, B., Shapiro, W. (2023). A hybrid approach to scalable real-world data curation by machine learning and human experts. <i>medRxiv</i>.</p>
<b>Books</b>	<p>Bertsimas, D., Orfanoudaki, A., &amp; Wiberg, H. (2025). <i>The Analytics Edge in Healthcare</i>.</p>
<b>Reports</b>	<p>Kulkarni, R., Brero, G., Ding, Y., Gupta, S., Koenig, S., Krishnan, R., Serra, T., Vayanos, P., Wasserkrug, S., Wiberg, H. (2025). AI/OR Workshop Series Final Report. Washington, D.C.: Computing Research Association (CRA).</p>
<b>Media</b>	<p>Wasserkrug, S., Cheriyan, V., Dai, T., ..., &amp; Wiberg, H. (2025). A Prominent Role for INFORMS in the Age of AI. <i>ORMS Today</i>.</p>

INFORMS. (2024). Changing the Landscape of Healthcare as we Know it—The Role and Impact of AI [Video]. YouTube.

**Selected Talks**    Optimizing Access to Primary Care

- INFORMS Annual Meeting (October 2024)

A hybrid approach to scalable real-world data curation by machine learning and human experts

- POMS Annual Meeting (April 2024)
- IMSI Workshop: Mathematics, Statistics, and Innovation in Health Care (May 2023)
- INFORMS Annual Meeting (October 2022)

Optimizing Virtual Care for Chronic Disease Patients: A Case Study in Diabetes

- INFORMS Annual Meeting (October 2022)

Mixed-integer Optimization with Constraint Learning

- INFORMS Optimization Society Annual Meeting (March 2024)
- YinzOR Conference (August 2023)
- Cornell ORIE Young Researchers Workshop (October 2021)

From Data to Prescriptions: An Optimization Framework for Treatment Personalization

- INFORMS Annual Meeting (October 2021)
- INFORMS Healthcare (July 2021)

COVID-19 Mortality Prediction: A Data-Driven Risk Assessment Tool

- SwissRe COVID-19 Summit: Moving from Reacting to Managing (November 2020)
- INFORMS Annual Meeting (October 2020)
- University of Cambridge Public Health Seminar (October 2020)

An Optimization Approach to Roster Creation

- Sloan Sports Analytics Conference (March 2020)

A Network-Based Approach to Drug-Target Interactions in Cancer

- INFORMS Annual Meeting (October 2019)
- INFORMS Healthcare (July 2019)

Predicting Cervical Spine Injury in Pediatric Trauma Patients

- INFORMS Annual Meeting (November 2018)

**Teaching**    **Carnegie Mellon University**, Pittsburgh, PA

90-722 Management Science I (Fall 2023, Spring 2024, Spring 2025)

90-760 Management Science II (Fall 2023, Spring 2024, Spring 2025)

**Honors and Awards**

<b>2025</b>	Martcia T. Wade Teaching Award (Heinz College, Carnegie Mellon University)
<b>2019-2022</b>	National Science Foundation Graduate Student Research Fellowship
<b>2020</b>	William Pierskalla Best Paper Award, 2020 INFORMS Annual Meeting
<b>2017</b>	Henry Gabbay Fellowship, MIT Sloan School of Management
<b>2016</b>	Byron W. Saunders Prize, Cornell University
<b>2015</b>	Omega Rho Honor Society, Cornell University ORIE Department
<b>2014</b>	Tau Beta Pi, Cornell University

**Service***University Service:*

- Dean search committee, Heinz College of Information Systems and Public Policy (2024-Present)
- Monday Faculty Research Seminar Co-organizer (2024-Present)
- Operations Research Center Seminar Co-organizer (2021)
- Search committee, Assistant Dean for Diversity, Equity, and Inclusion of MIT Schwarzman College of Computing (2021)

*INFORMS Service:*

- Member, INFORMS AI Integration Committee (2025)
- Subgroup Lead, INFORMS AI Roadmap Ad-Hoc Committee (2024)

*Conference Service:* INFORMS Optimization Society Conference Program Committee (2024), Pierskalla Award Reviewer (2021-2024), Sloan Sports Analytics Conference Research Competition Reviewer (2021, 2022), MSOM SIG Day Reviewer (2022)

*Journal Reviewer:* Management Science, Manufacturing & Service Operations Management, INFORMS Journal on Optimization, INFORMS Journal of Computing, JAMIA, JCO Clinical Cancer Informatics, npj Digital Medicine, JMIR, JMIR Medical Informatics, BMC Medical Informatics and Decision-Making, Scientific Reports

**Professional Membership**

Institute for Operations Research and the Management Sciences

*Societies:* Health Applications Society, Public Sector OR, Manufacturing and Service

Operations Management Society

Production and Operations Management Society

**Professional Experience****2022-2023****Flatiron Health**, New York, NY*Senior Machine Learning Operations Researcher (Post-doctoral role)***2015-2017****athenahealth**, Watertown, MA*Member of Technical Staff, Data Science**Intern, Data Engineering*