

## Rocky Mountain INFORMS: February 19, 2026

---

The Rocky Mountain INFORMS Chapter is pleased to host Tülay Flamand, an Assistant Professor of Business Analytics in the University of Colorado Denver Business School. She received her Ph.D. from the University of Massachusetts Amherst in Management Science. Prior to joining the CU Denver Business School, she served as an Assistant Professor in the Department of Economics and Business at the Colorado School of Mines. Her primary research focuses on business analytics applications to interdisciplinary areas, with a particular emphasis on retail analytics, and the development of exact and heuristic solution methodologies to achieve optimal and/or near-optimal solutions for complex combinatorial optimization problems. Dr. Flamand serves as an Associate Editor of INFOR and OMEGA and is an active member of INFORMS.



### **Title: A Branch-and-Price Approach for the Transportation Problem with Packing Constraints**

**Abstract:** We address a new variant of the transportation problem, where multiple commodities available at several supply nodes must be delivered to demand nodes using heterogeneous vehicle fleets. Each commodity has a specific weight, and vehicles have limited capacities, which introduces packing constraints into the transportation process. The objective is to minimize the total distribution cost, including both commodity purchase costs and transportation costs based on traveled distance. Because this problem is a combination of two classical problems, the transportation problem and the bin packing problem, it exhibits a highly combinatorial structure that poses significant computational challenges. To reasonably solve problem instances to optimality, we propose an exact branch-and-price algorithm. The method relies on a column generation framework in which pricing subproblems generate feasible packing patterns that satisfy vehicle capacity constraints. A computational study evaluates the effectiveness of the proposed branch-and-price approach on a range of problem instances.