Preface

The projects of reediting the Toth and Vigo book on vehicle routing and of editing a book on arc routing germinated during the ROUTE Conference in Sitges, Spain, in June 2011. The first edition of the vehicle routing book had been highly successful, and it was then felt that the evolution of the field over the past 10 years justified a significantly revamped reedition. This led Corberán and Laporte (while exploring the cellars of the Codorníu Winery during the conference excursion) to think up a proposal for a similar arc routing book that would be produced in parallel with the second edition of the vehicle routing book, with a similar structure and the same format. Again, the last major edited book on arc routing had been published more than 10 years before and the field had evolved considerably since then. Both proposals were presented to SIAM in the summer and were accepted. Today we are proud to offer to the research community two up-to-date collections of scientific contributions written by specialists in various areas of vehicle routing and arc routing. The two books are entitled *Vehicle Routing: Problems, Methods and Applications*, Paolo Toth and Daniele Vigo, editors, and *Arc Routing: Problems, Methods and Applications*, Ángel Corberán and Gilbert Laporte, editors, both published by SIAM.

The vehicle routing book contains 15 chapters. A few of these are amalgamations or significantly revised versions of chapters published in the first edition, while most of the others are entirely new. The first chapter offers an overview of the field of the Vehicle Routing Problem (VRP) and its main variants. The remainder of the book is made up of three parts: the Capacitated VRP, important variants of the VRP, and applications. The first part contains two chapters on classical and new exact algorithms, as well as a chapter on heuristics. The second part surveys several variants: the VRP with Time Windows, pickup and delivery problems for goods or people transportation, stochastic VRPs, and miscellaneous variants. The third part is devoted to applications and covers the VRP with profits, real-time and dynamic VRPs, software and emerging technologies, ship routing, VRP applications in disaster relief, and green vehicle routing.

The arc routing book is new and contains 16 chapters. It opens with a chapter on historical perspectives, followed by three main parts: arc routing problems with a single vehicle, arc routing problems with several vehicles, and applications. The first part starts with a chapter on complexity, which is followed by four chapters on the Chinese Postman Problem and on the Rural Postman Problem. The second part contains four chapters on the Capacitated Arc Routing Problem and two on arc routing problems with min-max and profit maximization objectives. The last part covers some of the most important arc routing applications, including meter reading, salt spreading, snow removal, garbage collection, and newspaper delivery.

We thank all authors for the quality of their contributions, as well as all referees who carefully reviewed the chapters and Claudio Gambella for his help in editing the final manuscript of the VRP book. Thanks are also due to Dr. Thomas Liebling, Ms. Elizabeth Greenspan, Ms. Ann Manning Allen, and Ms. Sarah J. Murphy from SIAM for their support and encouragement.

Ángel Corberán, Universitat de València
Gilbert Laporte, HEC Montréal
Paolo Toth, Università di Bologna
Daniele Vigo, Università di Bologna

May 2014