Preface

Ten years have passed since Alpern and Gal's monograph on Search Games and Rendezvous appeared. Over these years, the research on Search Games and Rendezvous, which started as a purely mathematical endeavor, has meandered into other disciplines. This is reflected by the changing background of the participants of the yearly workshop that Steve Alpern has organized at the London School of Economics for over a decade now. Originally these participants were mathematicians only, but slowly and steadily ever more computer scientists, biologists, and even an occasional management scientist, turned up, eventually equalling the number of mathematicians. The topics of the workshop changed accordingly. Classic mathematical problems on search games, that remain open today and can be found in this book, were supplemented by new problems that take a more algorithmic point of view, following the current trend in game theory, or that even go as far as trying to understand real life behavior of humans and other animals. The change of focus is such that we felt the need to prepare an update of Alpern and Gal's monograph, presenting a wider view of Search Games and Rendezvous, with an emphasis on open problems and future directions of research.

The preparation of a monograph is a time-consuming project, and so we decided to take a short cut, by inviting others to join in. In April 2012 we organized a workshop at the Lorentz Conference Center in Leiden, Netherlands. Around 50 researchers joined hands here, to discuss recent progress and new ideas. The result of this lies before you. We intend this book to be either used for self study, or as a guide to the literature for a graduate course, in an applied mathematics or a computer science programme. It is divided into four parts: Search Games, Geometric Games, Rendezvous, and Search Games in Biology – starting from the mathematical and ending at the applied. One gets the gist of the book's gradient, if one compares Shmuel Gal's review in the initial chapter to Jon Pitchford's open problems on search in biology at the end of the book. The first chapter of each section gives a survey and the final chapter of each section presents open problems. In selecting these problems, we have chosen those that seem to be solvable, rather than the ones that are notoriously hard. The exception to this are a few rendezvous problems in

Chap. 14 that have been around for a long time, but they make up for this noto-
riety by being very entertaining. There are also plenty of open problems that are
mentioned in the other chapters. We expect that readers will find these problems to
their liking, and solve them, so we can write another sequel to Search Games and
Rendezvous within the foreseeable future.

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