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Preface

The Great Bear is looking so geometrical,
One would think that something or other could be proved.
— Christopher Fry, "The Lady's Not for Burning"

During the past several decades, the gradual merger of the field of discrete geometry and the newer discipline of computational geometry has provided a significant impetus to mathematicians and computer scientists interested in geometric problems. The resulting field of discrete and computational geometry has now grown to the point where not even a semester program, such as the one held at the Mathematical Sciences Research Institute in the fall of 2003, with its three workshops and nearly 200 participants, could include everyone involved in making important contributions to the area. The same holds true for the present volume, which presents just a sampling of the work generated during the MSRI program; we have tried to assemble a sample that is representative of the program.

The volume includes 32 papers on topics ranging from polytopes to complexity questions on geometric arrangements, from geometric algorithms to packing and covering, from visibility problems to geometric graph theory. There are points of contact with both mathematical and applied areas such as algebraic topology, geometric probability, algebraic geometry, combinatorics, differential geometry, mathematical programming, data structures, and biochemistry.

We hope the articles in this volume — surveys as well as research papers — will serve to give the interested reader a glimpse of the current state of discrete, combinatorial and computational geometry as we stand poised at the beginning of a new century.

Jacob E. Goodman
János Pach
Emo Welzl