FOREWORD

In August 1990 a conference celebrating the 60th birthday of Steve Smale was held at the University of California at Berkeley. The goal of that conference, in the words of its organizers, was "to gather in a single meeting mathematicians working in the many fields to which Smale has made lasting contributions." Thus, the contributed and invited lectures covered a broad scope of subjects including Differential Topology, Dynamical Systems, and Mathematical Economics, among many others. A volume containing most of those lectures was subsequently published by Springer-Verlag (*From Topology to Computation, Proceedings of the Smalefest*, M. W. Hirsch, J. E. Marsden, M. Shub (Eds.), Springer-Verlag, 1993).

Steve moved to City University of Hong Kong in 1995 and on July 15th 2000 he turned 70. It was a pleasure for his friends and colleagues to organize a conference to celebrate this event. On July 13–17, 2000, the second *Smalefest* was held in Hong Kong. Unlike the first one, however, the goal was to focus on the subject Steve had been working on since the early 80's: Theory of Computation. It was a simple matter to gather people who had been influenced by Steve's work on the Theory of Computation, and a glance at this volume shows that other subjects were quite well represented as well.

In the the first *Smalefest* volume, articles were grouped according to subjects and each group of articles was preceded by an article commenting on Steve's work on that subject. In this volume we have included one such article — "The Work of Steve Smale on the Theory of Computation: 1990–1999" — doing so for the period between the two conferences. We thank Singapore University Press and World Scientific which granted us permission to reprint this article. For the remaining articles, we thank the contributors for their valuable work.

Special thanks go to the referees, who helped us select and polish the papers in this volume; to the Liu Bie Ju Centre for Mathematical Sciences for its generous sponsorship; and to Ms. Robin Campbell for her lightning-fast LaTeX formatting.

Steve Smale has positively influenced not only our mathematics but — through his friendship, sincerity, and generosity — our lives. It is with great pleasure that we (the editors and the contributors) dedicate this volume to Steve Smale as a belated gift on his 70th birthday. Happy 70 Steve!

Felipe Cucker
J. Maurice Rojas
December 2001