Preface

This volume contains the proceedings of the 16th Annual International Symposium on High Performance Computing Systems and Applications (HPCS 2002) at the Delta Beauséjour Hotel, Moncton, New Brunswick, Canada on June 16-19, 2002. This is the second symposium being held in the Province of New Brunswick. The first symposium was held in 1991. At that time, the symposium attracted papers from five countries and assumed an international character for the first time. In this volume, we have research papers by authors from 15 countries.

The papers included in this volume are divided into six sections spanning the wide spectrum of the interdisciplinary field of high performance computing. The first part, Architectures, consists of papers related to single as well as multiple processor architectures. A collection of papers on networks and grids are given in the following section. Section III, entitled Algorithms and Models, includes papers about non-numerical algorithms (for example, sorting and graph algorithms), and computation models. A set of papers on numerical parallel algorithms is given in Section IV. Section V, Scheduling and Performance Evaluation, discusses compiling, thread migration and metacomputing issues. Finally, many applications of high performance computing are given in Section VI, for example, computational chemistry, command and control, and finance.

An international panel of experts has refereed the papers included in this volume; the list of referees is given elsewhere in the proceedings. We would like to acknowledge their help in ensuring a high quality symposium.

At the time of writing this preface, the symposium program contains many invited speakers, including those sponsored by COMPAQ and IBM. A workshop on “How to Build Clusters” is offered jointly by Dr. Roger Impey and IBM. Dr. Paul Lu will give a half-day workshop on “HPC Tools Developed at the University of Alberta.” Dr. Keith De’Bell and Dr. John Whitehead have organized a workshop on “High Performance Computer Simulation of Cooperative Phenomena.” Dr. Eric Aubanel has assembled a panel of experts for a special session “Computational Chemistry.”

We would like to acknowledge the sponsors of the symposium. We would like to thank many people involved in the C3.ca Association Inc.: Dr. Andrew Pollard, Mr. Bruce Attfield, Dr. Mark Whitmore, Dr. Roger Impey, and Ms. Claudette Tourigny as well as other Central Coordination Office (CCO) staff. We acknowledge the support from Dr. Andrew Woodsworth (NRC) and the funding provided by NRC, Ottawa and the Atlantic Canada Opportunities Agency (ACOA) in publishing this volume. We thank Mr. Robert Gaudet and Ms. Micheline Paulin from ACOA for their help and the ACOA for their financial support. Finally, Mr. James Harper and Ms. Lucille Gaudet from the Greater Moncton Economic Commission also for their help in finding financial support for publishing this volume.

Our gratitude goes to our respective universities for their support and commitment. From Université de Moncton (UdeM), Mr. President Yvon Fontaine for supporting membership of the C3.ca Association Inc., Vice-President Dr. Truong Vo-Van for providing a letter of support, Dean of the Faculty of Research and Graduate Studies Dr. Yves Gagnon for financial support, the Dean of the Faculty of Science Dr. Charles Bourque and the Head of the Computer Science Department Prof. Julien Chiasson for financial support and for allowing all the secretarial and infrastructure to be used by the organizers. Ms. Lise Richard (UdeM) provided crucial secretarial support.

Our thanks also go to Dean Dr. Jane Fritz, Faculty of Computer Science, University of New Brunswick (UNB), for her support, including funding. Ms. Denise Williams (IEEE Publishing Dept.) also provided great help in organizing this volume.

Finally, we would like to thank the Organizing Committee members Dr. Chadia Moghrabi (UdeM), Dr. Eric Hervet (UdeM), Dr. Mustapha Kardouchi (UdeM), Dr. Francis LeBlanc (UdeM), Dr. Tang-Ho Lê (UdeM), Dominique St-Cyr (UdeM), Dr. Eric Aubanel (UNB), and Dominique St-Cyr (UdeM) for their enormous efforts in making this symposium a success.

Program Co-Chairs
Jalal Naji Almhana, Université de Moncton
Virendrakumar Chhabulal Bhavsar, University of New Brunswick