Preface

The 6th International Conference on Medical Imaging and Computer-Assisted Intervention, MICCAI 2003, was held in Montréal, Québec, Canada at the Fairmont Queen Elizabeth Hotel during November 15–18, 2003. This was the first time the conference had been held in Canada. The proposal to host MICCAI 2003 originated from discussions within the Ontario Consortium for Imageguided Therapy and Surgery, a multi-institutional research consortium that was supported by the Government of Ontario through the Ontario Ministry of Enterprise, Opportunity and Innovation.

The objective of the conference was to offer clinicians and scientists a forum within which to exchange ideas in this exciting and rapidly growing field. MICCAI 2003 encompassed the state of the art in computer-assisted interventions, medical robotics, and medical-image processing, attracting experts from numerous multidisciplinary professions that included clinicians and surgeons, computer scientists, medical physicists, and mechanical, electrical and biomedical engineers.

The quality and quantity of submitted papers were most impressive. For MICCAI 2003 we received a record 499 full submissions and 100 short communications. All full submissions, of 8 pages each, were reviewed by up to 5 reviewers, and the 2-page contributions were assessed by a small subcommittee of the Scientific Review Committee. All reviews were then considered by the MICCAI 2003 Program Committee, resulting in the acceptance of 206 full papers and 25 short communications. The normal mode of presentation at MICCAI 2003 was as a poster; in addition, 49 papers were chosen for oral presentation. All of the full papers are included in these proceedings in 8-page format, without any differentiation between the mode of presentation. All of the accepted 2-page short communications are also included, these appeared at the meeting as posters.

It was our great pleasure to welcome this year's MICCAI 2003 attendees to Montréal, the world's second-largest French-speaking city, and to the Fairmont Queen Elizabeth hotel, Montréal's finest conference venue. In addition to attending the conference, we trust that the attendees took the opportunity to explore what Montréal, and other parts of Canada, had to offer, and that they will return to see Canada's other face in a not-so-chilly time of the year. For those unable to attend, we trust that these volumes will provide a valuable record of the state of the art in the MICCAI 2003 disciplines.

We look forward to welcoming you to MICCAI 2004, scheduled to be held next year in St. Malo, France.

Organization

The institutional sponsor for MICCAI 2003 was The Robarts Research Institute, London, Ontario, Canada, which also provided the conference management facilities. Our major commercial sponsor was Northern Digital, Inc. of Waterloo, Ontario, Canada.

Executive Committee

Terry M. Peters (General Chair), London, Canada Randy Ellis (Co-chair/Program Chair), Kingston, Canada Christian Barillot, Rennes, France Guido Gerig, Chapel Hill, USA Nobuhiko Hata, Tokyo, Japan Mike Sherar, London, Canada

Program Committee:

Nicholas Ayache, Sophia Antipolis, France Christian Barillot, Rennes, France Guido Gerig, Chapel Hill, USA Leo Joskowicz, Jerusalem, Israel Ron Kikinis, Boston, USA Yoshinobu Sato, Osaka, Japan Mike Sherar, London, Canada Stephen M. Pizer, Chapel Hill, USA Russell Taylor, Baltimore, USA Walter Kucharczyk, Toronto, Canada

MICCAI Board

Alan Colchester (General Chair), University of Kent at Canterbury, UK

Nicholas Ayache, INRIA, Sophia Antipolis, France Christian Barillot, IRISA, Rennes, France Takeyoshi Dohi, University of Tokyo, Japan James Duncan, Yale University, New Haven, USA Terry Peters, Robarts Research Institute, London, Canada Stephen Pizer, University of North Carolina, Chapel Hill, USA Richard Robb, Mayo Clinic, Rochester, USA Russell Taylor, Johns Hopkins University, Baltimore, USA Jocelyne Troccaz, University of Grenoble, France Max Viergever, University Medical Center, Utrecht, The Netherlands

CME Coordination

Walter Kucharczyk, Toronto, Canada

Poster Coordination

Don Plewes, Toronto, Canada

Tutorial Chair

Gábor Székely, Zurich, Switzerland

Industrial Exhibition Co-chairs

Mike Sherar, London, Canada Ron Kikinis, Boston, USA

Student Liaison

Guy-Anne Turgeon, London, Canada Emma Duerden, Montréal, Canada

Conference Secretariat/Management

Janet Wallace, London, Canada Dayna Maki, London, Canada Ravi Gupta, London, Canada Jackie Williams, London, Canada Jeff Gardiner, London, Canada

Proceedings Managment

Jessie Ting Guo, London, Canada Hualiang Zhong, London, Canada Mark Wachowiak, London, Canada Melanie Josseau, London, Canada Stanislaw Szpala, London, Canada Sean Deoni, London, Canada Xunhua Yuan, London, Canada Pencilla Lang, London, Canada Guy-Anne Turgeon, London, Canada Weiguang Yao, Kingston, Canada Yan Chen, Kingston, Canada

Local Arrangements

Louis Collins, Montréal, Canada Simon Drouin, Montréal, Canada Simon Duchesne, Montréal, Canada Ingerid Reinertsen, Montréal, Canada Mallar Chakravarty, Montréal, Canada

Referees

The Scientific Review Committee was responsible for the detailed reviewing of 599 submissions, producing a total of over 1500 reviews for the Program Committee. Our heartfelt thanks for all the hard work to:

Takehide Asano Stefan Hassfeld Fred S. Azar Peter Hastreiter Fernando Bello Nobuhiko Hata Ewert Bengtsson David Hawkes Michael Bronskill Pierre Hellier Richard Bucholz Pheng Ann Heng Derek Hill Catherina R. Burghart Karl-Heinz Höhne Darwin G. Caldwell

Darwin G. Caldwell Karl-Heinz H
Kiyoyuki Chinzei Robert Howe
Jin-Ho Cho Koji Ikuta
Philippe Cinquin Hiroshi Iseki
Jean-Louis Coatrieux James Gee

Alan C.F. Colchester

D. Louis Collins

Eve Coste-Manière

Branislav Jaramaz

Tianzi Jiang

Ferenc Jolesz

Brian Davies

Amami Kato

Hervé Delingette

Jaydev P. Desai

Takeyoshi Dohi

James S. Duncan

Branislav Jaramaz

Ferenc Jolesz

Amami Kato

Yoshiki Kawata

Erwin Keeve

David Kennedy

James S. Duncan

Sun I. Kim

Takeyoshi Dohi David Kennedy
James S. Duncan Sun I. Kim
Rudolf Fahlbusch Masaki Kitajima
Gabor Fichtinger Etsuko Kobayashi
J. Michael Fitzpatrick Yukio Kosugi
Masakatsu Fujie Frithjof Kruggel
Robert Galloway, Jr. Luigi Landini
Maryellen Giger Stéphane Lavallée

Miguel Angel Gonzalez Ballester Heinz U. Lemke Eric Grimson Alan Liu

Eric Grimson Alan Liu
Gregory D. Hager William Lorensen
Steven Haker Shuqian Luo

Makoto Hashizume Sherif Makram-Ebeid

X Organization

Gregoire Malandain
Yoshitaka Masutani
Calvin R. Maurer Jr.
Tim McInerney Jr.
Dimitris Metaxas
Chuck Meyer
Michael I. Miga
Paul Milgram
Karol Miller
Kensaku Mori
Ralph Mosges
Yoshihiro Muragaki
Kiyoshi Naemura
Toshio Nakagohri

Yoshihiko Nakamura Kyojiro Nambu Nassir Navab Wiro Niessen Lutz Nolte

Wieslaw L Nowinski

Yuji Ohta

Allison M. Okamura Sebastien Ourselin Dinesh Pai

Heinz-Otto Peitgen

Xavier Pennec Terry M. Peters Stephen Pizer Josien Pluim Andreas Pommert

Richard A. Robb

Robert Rohling

Karl Rohr Juan Ruiz-Alzola Ichiro Sakuma Tim Salcudean Richard Satava Akinobu Shimizu Orjan Smedby Milan Sonka Colin Studholme Martin Styner Paul Suetens Naozo Sugimoto Gábor Székely Allen Tannenbaum Chris Taylor Clare Tempany

Frank Tendick

Bart M. ter Haar Romeny Demetri Terzopoulos Paul Thompson Jocelyne Troccaz Regis Vaillant

Johan Van Clevnenbreugel

Dirk Vandermeulen Michael W. Vannier Kirby Vosburgh Mark Wachowiak

Yongmei Michelle Wang

Wei-qi Wang Simon Warfield Carl-Fredrik Westin

William (Sandy) Wells-III

Ross Whitaker Louis L. Whitcomb Simon Wildermuth Yasushi Yamauchi

Terry Yoo Kelly Zou

Additional reviews and technical assistance were also needed to form the final program. We extend our thanks to the following people for their invaluable contributions.

Takehide Asano Purang Abolmaesumi Kadi Bouatouch Michael Choti Peter Kazanzides Hanif Ladak Alexis Roche Weiguang Yao