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Editorial

Ubiquitous Health Care Systems

Information technology helps to improve the quality of health care by disseminating and systematizing knowledge of diagnostic and therapeutic techniques as well as the organization and management of care. Unobtrusive, active, non-invasive technologies, including wearable devices, increasingly allow us to continuously monitor and respond to changes in the health of a patient. Such devices range from micro-sensors, integrated in textiles, through consumer electronics, embedded in fashionable clothes, to bodily-attached (such as belt-worn) personal computers with head mounted displays.

Such ubiquitous computing allows us to identify new ways of managing care that promises to be considerably easier in letting patients maintain their good health while enjoying their life in their usual social setting, rather than having to spend much time at costly, dedicated health care facilities. It may prove essential for ensuring quality of life as well as health care for increasingly aging societies.

As a promising field for the future of health care, ubiquitous health care systems are the focus of this 2005 edition of the IMIA Yearbook of Medical Informatics. The Preface to this Yearbook is also focused on the theme "ubiquitous health care systems", and has been written by Hans-Jörg Schek of ETH Zurich, Switzerland and of UMIT, Austria.

About the IMIA Yearbook of Medical Informatics

The Yearbook of Medical Informatics of the International Medical Informatics Association (IMIA) is distributed through IMIA's Member and Corresponding Member Societies worldwide. The Yearbook editors appreciate the contributions of distinguished researchers in medical informatics who have prepared 4 invited review papers, 6 research and education papers, and 8 synopses of papers included in the different disciplinary fields covered. In addition we owe a debt of gratitude to 71 reviewers who assisted in the selection of papers from the recent refereed literature.

The present Yearbook includes papers selected from the literature for the period April 2003 to March 2004.

The criteria for selection include: significance, representativeness and coverage of research in a given subfield, presented at a high level of quality. A more detailed description of these quality criteria can be downloaded from http://iig.umit.at/yearbook.

The overall selection is made by the editors with the advice of the eight section managing editors from each of the specialty areas. During this selection process, the managing editors first identify medical informatics papers published during the mentioned period and listed in MEDLINE. They then pre-select the papers with the highest quality for peer-review. Each of these pre-selected papers (about 150 each year) is then systematically reviewed by two external international referees, by the two editors of the Yearbook, and by the responsible managing editor, using a standardized assessment form to score and rank the papers. Based on these five reviews, about 40 papers are then finally selected for publication in the Yearbook.

Reviews

As is customary, the 2005 Yearbook includes a number of original review articles, which focus primarily on this year's theme, such as the paper by Gerhard Tröster. In addition, there are original reviews by Nancy Lorenzi on E-Health Strategies Worldwide, A. Jai Mohan on E-Health Strategies for Developing Nations and Sheila Teasdale on Primary Care Informatics.

Research and Education in Medical Informatics

The Yearbook provides an opportunity for highlighting an international selection of current education, training, and research programs in Medical Informatics. In this 2005 edition, au-thors from Austria, Germany, Italy, Japan, the Netherlands, the United Kingdom and the USA summarize their educational and research approaches.

Guest Editors

After the selection of papers to be included in the Yearbook was completed, guest editors were asked to write Synopses reviewing the papers in the different sections. The special section on Ubiquitous Health Care Systems was edited by Oliver Bott of the Technical University of Braunschweig, Germany. The section on Health and Clinical Management was edited by Christian Lovis of the University Hospital of Geneva, Switzerland; that on Patient Records by Thomas Beale of Deep Thought Informatics, Mooloolah, Australia; that on Health Information Systems by Enrique Gómez Aguilera of Universidad Politécnica de Madrid, Spain; that on Biomedical Imaging and Medical Signal Processing by Christian Barillot of Institut National de Recherche en Informatique et en Automatique, Rennes, France; that on Education and Consumer Informatics by Deede Gammon of the University Hospital of North Norway, Tromso, Norway, and that on Knowledge Processing and Decision Support by George Hripcsak of Columbia University, New York, NY, USA.

Information on IMIA

The Yearbook contains detailed information about IMIA, its Member Societies, Regional Groups, Working Groups, and Special Interest Groups. Preparation of the general pages describing IMIA activities received considerable assistance from Steven Huesing, the Executive Director. The section on IMIA Working Groups and Special Interest Groups was greatly aided by contributions from Evelyn Hovenga. For the second time a more detailed report on the activities of IMIA regions is included with the help of Regional Editors. We would like to thank Arie Hasman (for EFMI), Sedick Isaacs (for Helina), Elizabeth Di Chiara and Don Detmer (for the North American IMIA Member Societies), Yun Sik Kwak (for APAMI) and Lincoln de Assis Moura, Jr. (for IMIA-Lac) for their valuable contributions. The IMIA representatives from the individual countries provided the material for their own national societies.

Acknowledgements

The editors gratefully acknowledge the contributions of the Referees and Guest Editors. They would also like to thank the writers of the critical Review Papers and the contributors to the Research and Education Section.

They are most appreciative of the considerable skill, time, and effort devoted by the Managing Editors, especially the Executive Managing Editor Elske Ammenwerth (UMIT - University for Health Informatics and Technology Tyrol, Innsbruck, Austria), and by the Section Managing Editors, Oliver Bott (Technical University Braunschweig, Germany; section on Health Information Systems), Birgit Brigl (University of Leipzig, Germany; section on Decision Support, Knowledge Representation and Management), Petra Knaup (University of Heidelberg; section on Patient Records), Elke Lang (University of Applied Sciences Darmstadt, Dieburg, Germany; section on Bioinformatics), Bernhard Pfeifer (UMIT; section on Medical Signal Processing), Roland Pilgram (UMIT; section on Biomedical Imaging), Franz Ruderich (University of Applied Sciences, Heilbronn, Germany; section on Education and Consumer Informatics), and Astrid Wolff (Uni-

versity of Heidelberg; section on Health and Clinical Management and section on Ubiquitious Health Care Systems). They also wish to thank the Editorial Assistant, Martina Hutter, from the Department of Medical Informatics at the University of Heidelberg, without whose untiring efforts the Yearbook would not have been completed.

The Editors also wish to thank the members of the Advisory Board for their invaluable contributions to the planning of this Yearbook. They are: Marion Ball, Vice-President of Healthlink, Inc. of Baltimore, MD, USA, Jan H. van Bemmel, Rector of Erasmus University Rotterdam, The Netherlands, and Alexa McCray, Director of the Lister Hill Center of the National Library of Medicine, Bethesda, MD, USA.

The referees who contributed to the selection of articles in the 2005 Yearbook of Medical Informatics were:

Jos Aarts, The Netherlands
Samy A. Azer, Australia
Jytte Brender, Denmark
Yu-N Cheah, Malaysia
Yuen Ho Chow, Singapore
Enrico Coiera, Australia
Lincoln de Assis Moura, Brazil
Dawn Dowding, United Kingdom
Martin Dugas, Germany
Esat Eryilmaz, Turkey
Andrej Fandak, Slovak Republic
Gerald Fischer, Austria
Martin Fischer, Germany
Sergio Furuie, Brazil
Dragan Gamberger, Croatia
Reda R. Gharieb, Egypt
H.M. Goh, Malaysia
Stefan Gräber, Germany
Robert A Greenes, USA
Jane Grimson, Ireland
Ghassan Hamarneh, Canada
Peter Haug, USA
Kai Uwe Heitmann, Germany
Dimitar Hristovski, Slovenia
Dipak Kalra, United Kingdom
Carol Kamin, USA
Ron Kikinis, USA
Issac Kohane, USA
Dimitrios Koutsouris, Greece
Annette Langedijk, Switzerland
Peter Langkafel, Germany
Francis Lau, Canada
Thomas Lehmann, Germany
Gondy Leroy, USA
Ya-bin Liu, Japan
Phil Lord, United Kingdom
Nicos Maglaveras, Greece
Victor Maojo, Spain
Heimar Marin, Brazil
Fernando Martin-Sánchez, Spain
Silvia Miksch, Austria
Bondo Monga, France
Peter Moorman, The Netherlands
Jeannette Murphy, United Kingdom
Peter Murray, United Kingdom
Christian Nøhr, Denmark
Nora Oliveri, Argentina
Tom Oniki, USA
Andreas Pommert, Germany
Soumya Raychaudhuri, USA
Michael Rigby, United Kingdom
Cornelia Ruland, Norway
Pekka Ruotsalainen, Finland
Brigitte Seroussi, France
Amnon Shabo, Israel
Yuval Shahar, Israel
Nicola T. Shaw, Canada
Wong Jay Song, Republic of Korea
Leif Sörnmo, Sweden
Selma Supek, Croatia
Ian Symonds, New Zealand
Gabor Székely, Switzerland
Hiroshi Takeda, Japan
Hiroshi Tanaka, Japan
Huibert Tange, The Netherlands
Max Viergever, The Netherlands
Alfred Winter, Germany
Ulrike Wittig, Germany
Ulrich Woermann, Switzerland
Leong Tze Yun, Singapore
Qing Zeng, USA