

# THE 1<sup>ST</sup> INTERNATIONAL WORKSHOP ON INNOVATIVE SIMULATION FOR HEALTH CARE

*SEPTEMBER 19-21 2012*

VIENNA, AUSTRIA



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PRINTED IN RENDE (CS), ITALY, SEPTEMBER 2012

ISBN 978-88-97999-05-8 (Paperback)  
ISBN 978-88-97999-13-3 (PDF)

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**ISBN 978-88-97999-05-8 (Paperback)**

**ISBN 978-88-97999-13-3 (PDF)**

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### *WELCOME TO IWISH 2012!*

Since the late sixties, in the dawning modern computer age, the evolution of mostly technical disciplines of medicine was strongly influenced by computers. The primary target was the development of novel diagnostic methods, like nuclear medicine and computed tomography, enabled by new computer technology. These new modalities revolutionized medical diagnostics and built the foundations of what we call nowadays the transparent human.

The steady increase of computing power opened a new perspective to the analysis of complex systems. Medical and biological systems are influenced by a great variety of parameters, thus analysis of definite system states by causal deduction to a reduced set of parameters is hardly possible in the context of complex system interaction. Modeling and simulation arose as the novel paradigm to acquire knowledge and became a powerful research tool in bio-cybernetics. The vast issue-area of computer based analysis in biology and medicine is characterized by its interdisciplinary nature, it integrates knowledge from so different scientific fields as mathematics, chemistry, mechanics, economy or demography. Furthermore the multidisciplinary nature of the field stimulates the development of modern research strategies.

*The International Workshop on Innovative Simulation for Health Care (IWISH)* evolved from the EMSS conference, since the wide range of research topics and the increasing number of contributions demanded a special track within the scope of the I3M multi-conference. In its first year of occurrence the big number of presented papers has required a format of IWISH with seven sessions. They range from classical mathematical to patient specific modeling, health care management issues as well as traditional problems of bioinformatics or medical image sciences are addressed. The interdisciplinary approach to simulation and modeling in healthcare not only focuses on the achievement of new theoretical knowledge, e.g. by the improvement of expert systems, but also provides profit for the patient by improved health services, for example the reduction of waiting times, based on a sophisticated simulation of the clinical workflow.

The scope of IWISH is very broad, and we provide a new platform for scientists, engineers and practitioners of many disciplines to present their results and stimulate discussion on the various problems of healthcare. With this new interdisciplinary forum for simulation we hope to have initiated a fruitful development in health and life sciences being successfully continued during the next years.



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## ACKNOWLEDGEMENTS

The IWISH 2012 International Program Committee (IPC) has selected the papers for the Conference among many submissions; therefore, based on this effort, a very successful event is expected. The IWISH 2012 IPC would like to thank all the authors as well as the reviewers for their invaluable work.

A special thank goes to all the organizations, institutions and societies that have supported and technically sponsored the event.

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