Special Issue – Call for Paper

In recent years, healthcare systems all over the world face huge challenges caused by new diseases, demographic changes, medical accidents and rising costs.

The Special Issue on **New simulation based solutions for education, training and decision making in the healthcare sector** will host the best papers submitted and presented at the International Multidisciplinary Modeling & Simulation Multi-conference (I3M 2015) and will focus on Modeling & Simulation applied to health systems. Indeed, healthcare is nowadays a major research area where the use of modelling and simulation based approaches can be regarded as an excellent tool for investigating and solving complex problems including, among others, the spread of diseases, analysis of biological systems, organization of healthcare processes, resource optimization, scheduling of activities, etc.

Therefore, authors are invited to submit papers presenting new researches related to M&S theories, new modelling and analysis methodologies, simulation tools and software. Only high-quality, original scientific contributions will be considered and selected for publication.

The Special Issue welcome papers that focuses, but are not limited, on the following topics :

Computer aided diagnostics and therapy

- Modelling and simulation in bio-systems, physiology, cardiology, anesthesia, cancer, circulatory system, respiratory system, renal system, biomechanics
- Virtual Reality in surgical procedures,
- Virtual Reality for the treatment of disorders and/or rehabilitation,
- Virtual Reality for development and validation of medical simulators
- Model based information processing of medical images,
- Advanced methods in model based image processing,
- New methods of diagnostic imaging,
- New paradigms in functional imaging, e.g. PET and MR,
- Reconstruction in computed tomography,
- Model based segmentation and registration,
- Simulation in the context of diagnostics,
- Simulation of emergency procedures (disaster gaming),
- Simulation of disease proliferation,
- Disease management,
- Healthcare networks,
- Clinical information flows

Cellular and Molecular Models in Medicine

- Simulation in genetics and system biology,
- Simulating biological phenomena and organs,
- Modeling and recognition of regulatory motifs and modules,
- Pharmacometric modelling,
- Physiological simulations,
- Drug inventory management,
- Personalized drugs design
- Algorithms in DNA analysis
- Tissue engineering
- Molecular tumour diagnostics
- Novel methods in DNA arrays

- Protein structure analysis
- Regulatory networks, metabolic networks, proteomic networks,
- Databases in Bioinformatics
- Protein ontology data bases
- Novel HPC-paradigms in Bioinformatics

Management of Healthcare

- Waiting time issues in hospitals,
- Patient pathways,
- Modelling Emergency Departments,
- Modelling ancillary services,
- Patient flows in outpatient facilities,
- Simulation for surgical and clinic scheduling,
- Simulation for logistics of healthcare,
- Simulation of patient care;
- Models of elderly people care,
- Healthcare policy analysis,
- Ambulance planning,
- Simulation for health economics analysis
- Modelling of clinical environments

Modeling and Simulation for Biosciences and Bioinformatics

- Exploratory Bioinformatics and Computational Biological models, simulations and tools for helping Bioscientists
- Modeling and simulation as decision support for assisting Bioscientists and Medical practitioners
- Agent-based Modeling and simulation for Biological Systems, Healthcare facilities or Social Systems etc.
- Verification and Validation of Biological Simulations
- Equation based Modeling of Biological Systems
- Development and analysis of Complex Biological and Social Networks (Formal Specification, Modeling, Analysis and Simulation)
- Modeling and Simulation in System Biology
- Modeling and simulation of congenital disorders
- Modeling and simulation of epidemics and other diseases
- HIV/AIDS related M&S
- Tumor Growth modeling and Simulation
- Distributed Simulation of Biological Systems
- Formal Specification and Models such as using Z formal specification language, Systems Biology Markup Language (SBML) etc.
- Use of Cognitive Computation and AI techniques such as Neural Networks, Genetic Algorithms, Bio-inspired techniques, swarm intelligence algorithms for developing models of Biological systems
- Modeling and Simulation of Body Sensor Networks for e-Health
- Modeling and Simulation of Pervasive and Ambient Assisted Living systems, Disease Tracking and Monitoring systems
- Artificial Life related topics

Due Dates

Submission for full papers:	Jan 15, 2016
Notification of Acceptance	April 30, 2016
Expected date of publication:	TBD. Papers will be published online as soon as accepted.

Submissions for Full Paper Review

Interested authors must consult the journal's guidelines for manuscript submissions at
http://www.igi-global.com/calls-for-papers/international-journal-privacy-health-information/41027
prior to submission.
Please note in your online cover letter that your submission is for this special issue.

Please contact the Guest Editors if you have any questions.

Note: Manuscripts must not have been previously published or be submitted for publication elsewhere. Each submitted manuscript must include title, names, authors' affiliations, postal and e-mail addresses, an extended paper, and a list of keywords. For multiple author submission, please identify the corresponding author.

Final paper submissions

Each final submission must be prepared based on the journal requirements (see the **Author guidelines**.

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