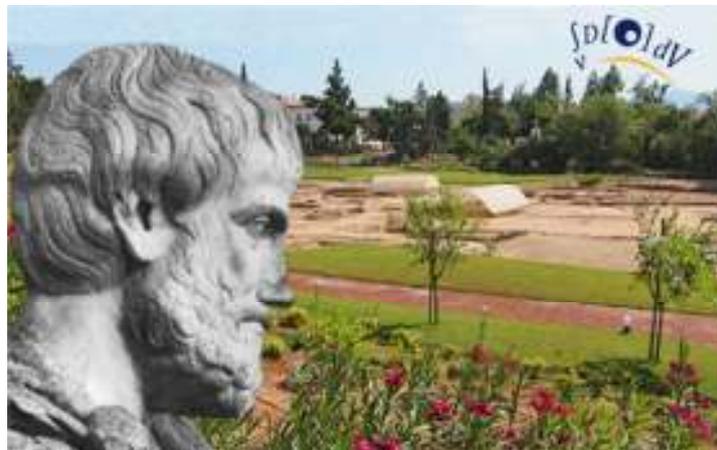


# 6th International Advanced Research Workshop on *In Silico* Oncology and Cancer Investigation

## The CHIC Project Workshop

November 3-4, 2014  
Athens, Greece



<http://6th-iarwisoci.iccs.ntua.gr/>

Venue:

Crowne Plaza Athens City Centre Hotel

<http://www.cpathens.com/>

# Programme

The workshop is sponsored by the European Commission through the CHIC research project and technically co-sponsored by the Institute of Electrical and Electronics Engineers (IEEE) - Engineering in Medicine and Biology Society (EMBS)

## Organizing Committee

- Georgios Stamatakos, PhD, ICCS - National Technical University of Athens (GR), **General Chair**
- Norbert Graf, MD, University Hospital of Saarland (DE)
- Metin Akay, PhD, University of Houston (USA)
- Dimitra Dionysiou, PhD, ICCS - National Technical University of Athens (GR)
- Kostas Marias, PhD, Foundation for Research and Technology – Hellas (GR)
- Ravi Radhakrishnan, PhD, University of Pennsylvania ( USA)
- Nikolaos Uzunoglu, PhD, ICCS - National Technical University of Athens (GR)

## Advisory Board

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- J.Couch, PhD, National Cancer Institute, National Institutes of Health, US
- M. Zaman, PhD, Boston University, US
- A.Bucur, PhD, Philips Electronics Netherlands, NL
- D.Testi, PhD, Interuniversity Consortium CINECA, IT
- E.Neri, MSc, CUSTODIX NV, BE
- Y. Nikolsky, PhD, Thomson Reuters, US

## PRESENTATION INSTRUCTIONS

PLEASE NOTE that each PowerPoint® presentation *of the technical program* will last 20 minutes. 10 additional minutes will be devoted to discussion, questions and answers. PLEASE bring your own laptop with a memory stick containing your presentation.

# Monday, 3 November

**08:30-09:00** Participants' Arrival–Registration (no admission fee) – Coffee

## WELCOME AND INTRODUCTORY TALKS

**09:00-09:20** Welcome Address and Introductory talk

**“Towards the mathematical principles of the natural philosophy of living matter: *In Silico* Oncology/ *In Silico* Medicine”**

by **Georgios S. Stamatakos**, Institute of Communication and Computer Systems, National Technical University of Athens, Greece.

**09:20-09:25** Opening greeting by **Norbert Graf**, University Hospital Saarland, Germany

**09:25-09:30** Opening greeting by **Metin Akay**, University of Houston, USA

**09:30-09:35** Opening greeting by **Nikolaos Uzunoglu**, Institute of Communication and Computer Systems, National Technical University of Athens

**09:35-10:00** Invited Talk: **Metin Akay**, University of Houston, USA

**“Engineering High-Throughput 3D in vitro Glioblastoma Model”**

by Fan Yantao, Naze Avci, Duong Nyugen, Andrei Dragomir, Yasemin Akay, and Metin Akay

## P-MEDICINE COLLABORATING PROJECT SESSION: PRESENTATION & EVALUATION TESTS

**10:00-10:10** **Norbert Graf**, University Hospital of Saarland, Germany

**“Brief outline of the p-medicine project”**

**10:10-10:40** **Marie-Luise Christin-Neumann**, Fraunhofer Institute for Intelligent Analysis and Information Systems, Germany

**“Usability Engineering in p-medicine”**

**10:40-11:00 Andreas Persidis**, BIOVISTA, Greece/USA  
“Literature-based discovery tools for clinical trial support”

**11:00-11:15 COFFEE BREAK**

**11:30 Departure for the Lyceum of Aristotle**

**12:00-13:00 Visit to the archaeological site of Aristotle’s Lyceum, guided tour and scientific discussion**  
([http://odysseus.culture.gr/h/3/eh352.jsp?obj\\_id=20744](http://odysseus.culture.gr/h/3/eh352.jsp?obj_id=20744))

**13:30-14:30 LUNCH**

## **TECHNICAL PROGRAM**

**14:30-15:00 Georgios Stamatakos**, Institute of Communication and Computer Systems–National Technical University of Athens, Greece  
“**Computational Horizons in Cancer (CHIC): Developing Meta- and Hyper-Multiscale Models and Repositories for *In Silico* Oncology – a Brief Technical Outline of the Project**”  
by Georgios Stamatakos, Dimitra Dionysiou, Fay Misichroni, Norbert Graf, Stefaan van Gool, Rainar Bohle, Feng Dong, Marco Viceconti, Kostas Marias, Vangelis Sakkalis, Nikolaus Forgo, Ravi Radhakrishnan, Helen Byrne, Caterina Guiot, Philippe Buechler, Elias Neri, Anca Bucur, Bernard de Bono, Debora Testi, and Manolis Tsiknakis

**15:00-15:30 Ruslan David**, University Hospital Saarland, Germany  
“**MyHealthAvatar Survey: Scenario Based User Needs and Requirements**”  
by Ruslan David, Feng Dong, Yvonne Braun and Norbert Graf

**15:30-16:00 Daniele Tartarini**, University of Sheffield, UK  
“**The VPH Hypermodelling Framework for Cancer Multiscale Models in the Clinical Practice**”  
by Daniele Tartarini, Kewei Duan, Nicolas Gruel, Debora Testi, Dawn Walker, and Marco Viceconti

**16:00-16:30 Nikolaos Christodoulou**, Institute of Communication and Computer Systems, National Technical University of Athens, Greece  
“**A Modular Semantic Infrastructure Layout for the Management of Hypermodel-Pertinent Metadata in the Context of *In Silico* Oncology**”  
by Nikolaos Christodoulou and Georgios Stamatakos

**16:30-16:45 COFFEE BREAK**

**16:45-17:15 Iheanyi Nwankwo**, Gottfried Wilhelm Leibniz Universitaet Hannover, Germany

**“Legal and Ethical Aspects of *In Silico*–Based Medicine”**

by Alan Dahi, Iheanyi Nwankwo, Marc Stauch, and Nikolaus Forgó

**17:15-17:45 Iryna Lishchuk**, Institute for Legal Informatics, Gottfried Wilhelm Leibniz Universitaet Hannover, Germany

**“IPR issues in multi-scale cancer modeling”**

by Iryna Lishchuk and Marc Stauch

**17:45-18:15 Elias Neri**, CUSTODIX NV, Belgium

**“Incorporating Data Protection in *In Silico* Research: A case of CHIC”**

by Elias Neri and Wouter Dhaeze

**END OF THE SCIENTIFIC PROGRAM OF THE FIRST DAY**

**SOCIAL PROGRAM, MONDAY 3 NOVEMBER**

**19:30 Start of walk from Monastiraki Metro Station to MONO restaurant through the Athenian Roman Agora and the Tower of Winds**

**20:00 Workshop Dinner: MONO restaurant, [www.monorestaurant.gr](http://www.monorestaurant.gr) (marked on the following map).**

**Address: Mpenizelou Palaiologou 4C, Plaka, Athens. Tel. + 30-210-322-6711**



# Tuesday, 4 November

08:30-09:00 Participants' arrival – Coffee

## TECHNICAL PROGRAM

09:00-09:30 James Grogan, University of Oxford, UK

**“Simulating Tumour Vasculature at Multiple Scales”**

by James Grogan, Philip Maini, Joe Pitt-Francis, and Helen Byrne

09:30-10:00 Ilaria Stura, University of Torino, Italy

**“ A Two Population Model of Cancer Growth With Fixed Carrying Capacity”**

by Ilaria Stura, Gabriele Domenico and Caterina Guiot

10:00-10:30 Stavroula Giatili, Institute of Communication and Computer Systems, National Technical University of Athens, Greece

**“Modelling Glioblastoma Growth and Inhomogeneous Tumour Invasion with Explicitly Numerically Treated Neumann Boundary Conditions”**

by Stavroula Giatili and Georgios Stamatakos

10:30-11:00 Markos Antonopoulos, Institute of Communication and Computer Systems, National Technical University of Athens, Greece

**“A Brownian Motion Based Mathematical Analysis as a Potential Basis for Modelling the Extent of Infiltration of Glioma Cells into the Surrounding Normal Brain Tissue”**

by Markos Antonopoulos and Georgios Stamatakos

11:00-11:15 COFFEE BREAK

11:15-11:45 Stefaan Van Gool, Katholieke Universiteit Leuven, Belgium (*via SKYPE*)

**“Dendritic cell vaccination for glioblastoma multiforme: Clinical Experience and Future Directions”**

by Joost Dejaegher and Stefaan Van Gool

11:45-12:15 Christos Kyroudis, Institute of Communication and Computer Systems-National Technical University of Athens, Greece

**“Simulation of Cervical Cancer Response to Radiotherapy”**

by Christos Kyroudis, Dimitra Dionysiou, Eleni Kolokotroni, Jesper Kallehague, Kari Tanderup and Georgios Stamatakos

12:15-12:45 Giorgos Grekas, Foundation for Research and Technology Hellas, Greece

**“The Importance of Grid Size and Boundary Conditions in Discrete Tumor Growth Modeling”**

by Georgios Tzedakis, Giorgos Grekas, Eleftheria Tzamali, Kostas Marias, and Vangelis Sakkalis.

**12:45-13:45 LUNCH**

**13:45-14:15 Ioannis Karatzanis**, Foundation for Research and Technology Hellas, Greece

**“A Collaborative Central Reviewing Platform for Cancer Detection in Digital Microscopy Images”**

by Athanasios Iliopoulos, Ioannis Karatzanis, Manolis Tsiknakis, Vangelis Sakkalis, and Kostas Marias

**14:15-14:45 Georgios Manikis**, Foundation for Research and Technology Hellas, Greece

**“Multi-Modal Medical Data Analysis Platform (3DMAP) for Analysis and Predictive Modelling of Cancer Trial Data”**

by Georgios Manikis, Evangelia Maniadi, Manolis Tsiknakis and Kostas Marias

**14:45-15:15 Marek Blazewicz**, Poznań Supercomputing and Networking Center, Poland

**“Development of the p-medicine Oncosimulator as a Parallel Treatment Support System”**

by Marek Blazewicz, Eleni Georgiadi, Juliusz Pukacki, and Georgios Stamatakos

**15:15-15:45 Philippe Buechler**, Universitaet Bern, Switzerland (*VIA SKYPE*)

**“A model of tumor growth Coupling a Cellular biomodel with biomechanical simualtions”**

by Farhad Rikhtegar, Eleni Kolokotroni, Georgios Stamatakos and Philippe Buechler

**15:45-16:15 Georgios Stamatakos (on behalf of the authors)**

**“Machine Learning Predictions of Cancer Driver Mutations”**

by Joseph E. Jordan and Ravi Radhakrishnan

**16:15-16:30 COFFEE BREAK**

**16:30-17:00 Round table discussion**

**END OF THE WORKSHOP**