

# ESMTB Infoletter

## March 2009



[www.esmtb.org](http://www.esmtb.org)

Dear colleague

with this ESMTB Infoletter you receive information about conferences, workshops, schools and open positions. Please send relevant information to be included in the next ESMTB infoletter to [info@esmtb.org](mailto:info@esmtb.org).

Best regards, Andreas Deutsch  
Dresden, 16th of March 2009

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## Conferences

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**Summer Solstice 2009 International Conference on Discrete Models of Complex Systems at Institute of Theoretical Physics and Astrophysics, University of Gdansk, Gdansk, Poland**

**Date: 2009-06-22 to 2009-06-24**

Complex systems are pervasive in many fields of science and we encounter them everyday and everywhere in our life. Their examples include financial markets, highway transportation networks, telecommunication networks, human economies, social networks, immunological systems, ant colonies, ect. The key feature of a complex system is that it is composed of large number of interconnected and interacting entities exhibiting much richer dynamical properties on global scale than they could be inferred from the properties and behaviours of its individual entities. Complex systems are studied in many areas of natural sciences, social sciences, engineering and mathematical sciences. The integral part of these interdisciplinary studies forms discrete modeling. These models can be seen as the simplest laboratories to study phenomena exhibited by complex systems like self-organization processes, pattern formation, cooperation, adaptation, competition, attractors, or multi-scaling phenomena. The objective of this conference is to bring researchers working on discrete modeling of complex systems and to provide a forum for exchange of ideas and presentation of results of their research.

Researchers and scientists working in the area of discrete modeling of complex systems are invited to submit abstracts on their research to be presented at the conference. Of particular inter-

est are approaches: cellular automata, lattice gas cellular automata, agent based simulation models, individually based simulation models, networks. Both theoretical and applied research is of interest. Accepted abstracts will be scheduled as talks or posters.

All participants of the Conference are invited to submit a paper for publication in the special issues of the Acta Physica Polonica B. All submissions will be peer-reviewed.

Abstract submission: May 15, 2009

Early registration: May 1, 2009

Manuscript submission: September 1, 2009

<http://www.iftia.univ.gda.pl/solstice>

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**Conference on Dynamics in Systems Biology at Aberdeen, UK**

**Date: 2009-09-14 to 2009-09-18**

Theory of dynamical systems plays a central role in integrating biological experiments with mathematical developments. This conference will address the synergistic developments in systems biology research, covering a wide range of mathematical approaches used to uncover the general principles and mechanisms governing biological processes and function at all levels.

<http://www.abdn.ac.uk/dsb>

<mailto:dsb09@abdn.ac.uk>

**International Conference of Numerical Analysis and Applied Mathematics 2009 (ICNAAM 2009) at Aquila Rithymna Beach, Rethymno, Crete, Greece**

**Date: 2009-09-18 to 2009-09-22**

The aim of the symposium is to bring together researchers with different backgrounds and interests in all aspects of Game Theory, its applications in Industrial Organization, and its practice, in order to further communication, collaboration, and exchange of new ideas.

The topics include, but are not limited to the following:

- Game Theory and Management,
- dynamic games,
- stochastic games,
- network games,
- bargaining,
- coalition formation,
- cooperative games,
- differential games,
- learning,
- non-cooperative games,
- oligopoly games,
- voting and power indices,
- applications of games in fields such as strategic management, marketing, operations management, public management, financial management, human resource, energy and resource management, and, in particular, industrial organization that investigates the outcomes of market structures in environments with prices or quantity competition, demand and costs uncertainty, product differentiation, R&D and innovation, international trade policies, and others.

Please refer to the conference website ICNAAM 2009 (<http://www.icnaam.org/>) for further information on the registration, program, symposia, hotels and social program.

Early Registration ends: April 30, 2009

<http://www.icnaam.org/>  
<mailto:fernandaamelia@eu.ipp.pt>

**European Conference on Complex Systems 2009 at University of Warwick, UK**

**Date: 2009-09-21 to 2009-09-25**

ECCS09 will be a major international conference and event in the area of complex systems and interdisciplinary science in general. It will offer unique opportunities to study novel scientific approaches in a multitude of application areas. Two days of the conference are reserved for satellite conferences which may or may not be directly related to the conference tracks.

Paper submission for ECCS'09 has now opened. Current deadline: 31 March 2009. We take submissions for

- (a) long papers (which correspond to a 40min talk)
- (b) short paper (which correspond to a 20min talk)
- (c) poster presented at ECCS'09

Your submission will go through a review process coordinated by the different track chairs and co-track chairs of ECCS'09 (see committees).

Additional information can be obtained from this website. Please note that ECCS'09 offers also the possibility to publish high-quality papers in different journals. Papers will go through an additional independent review process.

Conference Tracks:

- Policy, Planning & Infrastructure (Policymaking; Urban Planning; Internet; Transport & Power Networks; Medical & Health Systems)
- Collective Human Behaviour and Society (Economics & Finance; Sociology; Psychology; Game Theory)
- Interacting Populations and Environment (Climate Change; Pollution; Demography; Ecology; Epidemiology)
- Complexity and Computer Science (Robotics; Grids, Clouds & Novel Computing; Ubiquitous Computing)
- From Molecules to Living Systems (Self-assembly & Self-organisation; Neuroscience; Cell, Developmental and Systems Biology; Genetics; Medicine & Physiology)
- Mathematics and Simulation (Mathematics; Modelling; Simulation; Theoretical Physics)

<http://eccs09.info/>  
<mailto:eccs09@warwick.ac.uk>

**2009 IEEE Toronto International Conference Science and Technology for Humanity (TIC-STH 2009) at Toronto, Ontario, Canada**

**Date: 2009-09-27 to 2009-09-29**

The TIC-STH conference is an international forum for state-of-the-art research across a broad spectrum of the IEEE science and technology fields of interest.

The format of the conference is several parallel Symposia focusing on the advanced scientific and technological problems, especially of the interdisciplinary nature.

We cordially invite prospective authors to submit papers to the Symposium on Engineered & Natural Complex Systems: Modeling, Simulation & Analysis to be held at the TIC-STH 2009 conference in Toronto. This interdisciplinary Symposium provides forum to discuss the state-of-the-art research across a broad spectrum of the IEEE science and technology fields of interest and is not limited to the traditional IEEE areas. The Symposium topics include, but are not limited, to the following:

- Structure, function and dynamics of complex systems, i.e. data communication networks, cyberspace, transportation networks, organizational networks, power grids, biological, physical, social, ecological, epidemiological and other complex systems & networks
- Emergence, multiscale phenomena, self-organization, self-similarity, long range dependence, phase transition, pattern formation, synchronization, robustness, reliability, fragility, interdependence, cooperation, adaptation, evolution, clustering, small world, degree distribution, diameter, motifs, etc.,
- Analysis & control techniques of dynamics & performance, mean field & information theory of complex systems & networks
- Cellular automata, agent based & individually based and other models of complex systems & networks and their simulations

#### IMPORTANT DATES

- Paper Proposals Submission (Title/Abstract) Friday, March 6
- Submission of Full Length Papers for Review Friday, May 1
- Notification of Acceptance Friday, June 26

- Final Paper Submission Deadline Friday, July 31
- Author's Registration Deadline Friday, July 31
- Advance Registration Deadline Friday, August 28

<http://toronto.ieee.ca/tic-sth2009/>

<mailto:admin@TIC-STH2009.org>

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## Workshops

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**International Workshop on Computational & Integrative Biology at Hangzhou, China**

**Date: 2009-09-18 to 2009-09-20**

Biological data are scattered across thousands of biological databases and hundreds of scientific journals. Current high throughput genomics technologies generate large quantities of high dimensional data. Microarray, NMR, mass spectrometry, protein chips, gel electrophoresis data, Yeast-Two-Hybrid, QTL mapping, gene silencing and knock-out experiments are all examples of technologies that capture thousands of data points, often in single experiments. The challenge for Computational & Integrative Biology is to capture, model, integrate and analyse these data in a consistent way to provide new and deeper insights into complex biological systems.

This, International Workshop on Computational & Integrative Biology, as a satellite meeting of the International Conference of Integrative Bioinformatics, will be of interest to Bioinformaticians, Computer Scientists, Biologists and others working in, or interested in finding out more about, the developing area of integrative bioinformatics. There will be opportunities to present and discuss methods, theoretical approaches or their practical applications.

Topics:

- Database integration
- Combined dry and wetlab studies
- Molecular databases / Data warehouses
- Errors and inconsistencies in biological databases
- Prediction and integration of metabolic and regulatory networks
- Genotype-phenotype linkage
- Protein-protein interactions
- Integrative microarray modeling and analyses
- Integrative approaches for drug design

- Computational infrastructure for biotechnology
- Virtual cell
- Tool integration and workflow systems
- Laboratory information management systems
- Computational systems biology
- Quality and consistency of biological ontologies
- Integrative modelling and simulation frameworks
- Integrative data and text mining approaches
- Network analysis
- Data visualisation and visual analytics

1st July 2009 Paper submission deadline (up to 12 pages)

1st August 2009 Notification of acceptance for papers

23th August 2009 Camera ready paper submission deadline

31st August 2009 Poster and software submission deadline

5th September 2009 Notification of acceptance for poster and software demo abstracts

<http://www.cls.zju.edu.cn/binfo/IB/2009/>  
<mailto:mchen@zju.edu.cn>

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**AUTOMATA 2009: 15th IFIP International Workshop on Cellular Automata and Discrete Complex Systems at São José dos Campos, São Paulo, Brazil**

**Date: 2009-10-10 to 2009-10-12**

AUTOMATA 2009 will be the fifteenth workshop in a series of homonymous events established in 1995 by members of the Working Group 1.5, subordinated to IFIP Technical Committee 1: Foundations of Computer Science. The original Working Group 1.5 was discontinued in 2004, but has recently been re-established, with wider scope and renewed strength.

AUTOMATA 2009 is the first edition of the workshop in the updated phase of the group, now denominated Cellular Automata and Discrete Complex Systems, with the following attributions:

- To establish and maintain a permanent, international, multidisciplinary forum for the collaboration of researchers in the fields of Cellular Automata (CA) and Discrete Complex Systems (DCS).
- To provide a platform for presenting and dis-

cussing new ideas and results.

- To support the development of theory and applications of CA and DCS (e.g. parallel computing, physics, biology, and others) as long as fundamental aspects and their relations are concerned.
- To identify and study within an inter- and multidisciplinary context, the important fundamental aspects, concepts, notions and problems concerning CA and DCS.

As such, AUTOMATA 2009 opens up to stressing all fundamental aspects of cellular automata and discrete complex systems, including: Dynamics; Algebraic aspects; Complexity issues; Emergent properties; Formal language processing; Models of parallelism and distributed systems; Phenomenological descriptions; Scientific modeling; and Practical applications.

Deadline for paper submission: May 24th, 2009

<http://www.mackenzie.br/Automata2009.html>  
<mailto:pedrob@mackenzie.br>

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## Schools

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**Summer School: Mathematical Modeling in Cell Biology at BioQuant, Heidelberg, Germany**

**Date: 2009-06-10 to 2009-06-12**

Registration is now open for the Summer School "Mathematical Modeling in Cell Biology" June 10-12 at the BioQuant Center Heidelberg. The school addresses theoreticians and experimentalists alike.

Topics:

Mathematical modeling in cell biology, focusing on topical applications:

- Signal transduction in the immune system and in development
- Dynamics of the cytoskeleton and vesicular transport
- Chromatin dynamics and gene regulation

Modeling techniques discussed in relation to experimental data include:

- Analysis and simulation of dynamical systems and stochastic processes
- Reaction-diffusion systems and spatio-temporal

patterning

- Logic analysis of regulatory networks
- Parameter estimation and model identification

Workshop Aim:

The workshop addresses Ph.D. students and post-doctoral researchers. It will acquaint experimentalists with the utility of mathematical modeling in cell biology and introduce theoreticians to successful examples of interdisciplinary collaboration. Besides the lectures, there will be ample time for discussion with the speakers. Selected participants will present their own research projects in short talks.

Application:

To apply please submit a brief CV and a half-page description of your motivation to participate in the workshop. If you would like to give a short talk about your work, please submit title and abstract (however, this is not compulsory for participation). If the workshop is overbooked, participants will be selected based on their applications.

Please send your application to the workshop secretary, Ms Diana Haendly (d.haendly@dkfz-heidelberg.de), until Sunday, April 26, 2009. Confirmation of your registration will be sent out until April 30, 2009.

[www.dkfz.de/en/sbcancer/modeling-school2009.html](http://www.dkfz.de/en/sbcancer/modeling-school2009.html)

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### Otto Warburg International Summer School on Regulatory (Epi-)Genomics at Harnack House, Berlin, Germany

**Date: 2009-08-29 to 2009-09-06**

The aim of this program is to bring together researchers and students from different backgrounds (like molecular biology, bioinformatics, biological physics, mathematics) to discuss the mechanisms underlying transcriptional regulation. The topic of this summer school is the connection between transcription factor binding events and epigenetic phenomena, like DNA methylation and histone modifications. We plan an integrated program, which comprises advanced level lectures during the first days and leads to topical research seminars in the second part. The schedule will leave sufficient time for discussion and interaction among students and lecturers.

The deadline for applications is May 29, 2009. The registration fee of 600 EUR includes costs for accommodation, social events and meals.

The application form is available online on the workshop's website at <http://ows.molgen.mpg.de>

The announcement as a printable poster is available from [ows.molgen.mpg.de/2009/poster09.pdf](http://ows.molgen.mpg.de/2009/poster09.pdf)

<http://ows.molgen.mpg.de>

<mailto:luz@molgen.mpg.de>

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## Open Positions

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### PhD Scholarships in Bioinformatics and Computational Medicine at UCD Dublin, Ireland

**Deadline for applications: 2009-03-30**

New high-throughput technologies in biology have opened up exciting opportunities for numerate scientists to work in advanced areas of biological research. Our programme takes students from a variety of backgrounds (statistics, engineering, mathematics, computer science, biology, chemistry, physics) and gives them a structured training during their PhD, tailored to their needs. Each project is jointly run by two supervisors, one with a background in modelling or computational analysis and one with an experimental research programme. The student is integrated into the research teams of both research groups. Applications are invited from EU students for 4-year PhD positions under the graduate education programme (GREP) of the Irish Research Council for Science, Engineering and Technology (IRCSET). Most studentships commence Oct 2009.

Projects currently available:

- Infection: Comparative genomics of pathogenic yeast
- Networks: Biological patterns in networks of protein and gene interactions
- Signalling: Spatio-Temporal Dynamics of Cell Signalling
- Cancer: Alternative Transcript Expression in Malignant Melanoma
- Infection: Functional genomics of mycobacteria-macrophage interactions in cattle

- Plant Systems Biology: The cis-regulatory code underlying plant development
- Health and disease: The Transcriptomic Phenotype of Human Adipose Tissue
- Statistics: Epigenetic/transcriptional integration from next generation sequencing
- Statistics: detecting alternate splice variants using next generation sequencing
- Modelling evolution: Modelling the evolution of protein interactions and motifs
- Thrombosis/signaling: Discovery of oligopeptides modulating platelet signalling
- Virology/signaling: Short linear protein motifs in HIV signalling in host cells
- Computational chemistry: Structurally constrained peptides as peptide mimetics
- Subcellular location: Determinants of protein localization in mammalian cells
- Systems Biology: Spatiotemporal code of signal specificity and pathway crosstalk
- Systems Biology: Design principles of regulatory and metabolic networks

Application procedure and further details: <http://bioinformatics.ucd.ie/PhD> 10 of these studentships are funded by IRCSET. They fund student stipend (16,000), fees, some lab consumables (up to 5,000 per year), and travel budget to allow the student to get work experience abroad and industrial work experience in a company in Ireland or abroad. 4 studentships are funded by SFI

(Science Foundation Ireland).

Please contact: [bioinfo@ucd.ie](mailto:bioinfo@ucd.ie)  
<http://bioinformatics.ucd.ie/PhD/>

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### PhD post at University of Aberdeen, UK

**Deadline for applications: 2009-03-31**

In the following days, I will be assuming my new post at the University of Aberdeen (Scotland) as a Senior Lecturer. I can apply for a PhD fellowship (12,940 Pounds/year after tax, for 3 years) at the University of Aberdeen, preferably in the area of synchronization and information transmission in complex networks (but also in other areas of my academical expertise would be fine), with a particular focus in models of neural and communication networks. For that I almost only need an "outstanding student" (somehow proved by a good CV). This student should have a UK/EU nationality, should preferably have knowledge in the area of complex networks or dynamical systems, good computational skills and be ready to start working in October 2009.

Please contact: [murilo.baptista@fc.up.pt](mailto:murilo.baptista@fc.up.pt)  
<http://cmup.fc.up.pt/cmup/murilo.baptista/>