

ESMTB Infoletter

August 2009



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.

Best regards, Andreas Deutsch
Dresden, 17th of August 2009

Conferences

5th Biosim Conference at The Danish Parliament, Copenhagen

Date: 2009-08-25 to 2009-08-29

The 5th Biosim Conference will continue the tradition for important scientific presentations, lively discussions, and useful interaction across traditional disciplinary boundaries as developed through our conferences in Mallorca (2005 and 2006), Potsdam (2007) and Budapest (2008).

The conference will present our most recent results in the areas of:

- Ethics, regulatory issues and communication with the public
- Diabetes
- Hypertension and cardiovascular diseases
- Mental disorders and neuronal systems
- Cancer, and
- Methodological issues.

http://www.dtu.dk/centre/BIOSIM/5th_BioSim_Conference.aspx

The 7th Conference on Computational Methods in Systems Biology at Bologna, Italy

Date: 2009-08-31 to 2009-09-01

The CMSB (Computational Methods in Systems Biology) conference series was established in 2003 to help catalyze the convergence of modellers, physicists, mathematicians, and theoretical computer scientists from fields such as language design, concurrency theory, program verification, and

molecular biologists, physicians, neuroscientists interested in a systems-level understanding of cellular physiology and pathology. CMSB'09 solicits original research articles, tutorials, PhD presentations, and posters. These may cover theoretical or applied contributions that are motivated by a biological question and can demonstrate either actual or potential usefulness towards answering this question. They may also cover models of computation inspired by biological processes. Particularly relevant case studies and open issues from the biological side that demands modelling of systems, model analysis, and simulation are of interest as well.

<http://cmsb09.cs.unibo.it/>

German Conference on Bioinformatics 2009 at Halle (Saale), Germany

Date: 2009-09-28 to 2009-09-30

The German Conference on Bioinformatics is an annual, international conference devoted to all topics in bioinformatics. Its tradition reaches back to 1985, and recent conferences have attracted about 250 participants from all over the world.

The 2009 conference is organized by the Martin Luther University Halle-Wittenberg

The conference language will be English.

Areas of interest at the German Conference on Bioinformatics 2009 are:

- Sequence Analysis and Comparative Genomics
- Transcriptomics, Metabolomics, and Proteomics
- Metabolic and Regulatory Networks
- Systems Biology
- Structural Bioinformatics

- Quantitative Genetics
- Small non-coding RNAs
- High-throughput Sequencing Data
- Phylogeny
- Image Analysis

The focus is not limited to specific computational techniques or biological applications. Scientists applying bioinformatics in life science - particularly in plant research - are encouraged to present their work at the GCB.

<http://www.gcb2009.de/>

Workshops

International Workshop on Data to Dynamics - D2D at Freising, Germany

Date: 2009-09-23 to 2009-09-25

The workshop is organized within the framework of the Helmholtz Alliance on Systems Biology, a German-wide systems biology network. It is dedicated to

- Integration of biological data
- Statistical analysis of high-throughput data
- Model inference
- Parameter estimation
- System theory
- Modeling of inherent indeterminacies

The focus is not limited to specific computational techniques, mathematical or biological models.

Keynote talks will be given by
Giancarlo Ferrari-Trecate, Università degli Studi di Pavia

Ulrike Gaul, Rockefeller University

Kevin Janes, University of Virginia

Jens Timmer, Universität Freiburg

You are kindly invited to submit an abstract for short talk and/or poster until August 31st. Please visit our website for further details: <http://www.data2dynamics.com>

<http://www.data2dynamics.com>

International Workshop on High Performance Computational Systems Biology (HiBi 2009) at Trento, Italy

Date: 2009-10-14 to 2009-10-16

The HiBi (High performance computational systems Biology) workshop establishes a forum to link researchers in the areas of parallel computing and computational systems biology. One of the main limitations in managing models of biological systems comes from the fundamental difference between the high parallelism evident in biochemical reactions and the sequential environments employed for the analysis of these reactions. Such limitations affect all varieties of continuous, deterministic, discrete and stochastic models; undermining the applicability of simulation techniques and analysis of biological models. The goal of HiBi is therefore to bring together researchers in the fields of high performance computing and computational systems biology. Experts from around the world will present their current work, discuss profound challenges, new ideas, results, applications and their experience relating to key aspects of high performance computing in biology.

<http://www.cosbi.eu/hibi09/index.php/organization>

Open Positions

Two Postdoc positions (2 years each) at Leiden University (Netherlands)

Deadline for applications: 2009-09-15

The Postdocs will take part in a large collaborative project (BetNet), funded by the Dutch Science Foundation. Participating institutes: see below, and the Groningen Biomolecular Sciences and Biotechnology Institute (GBB, University of Groningen). The project is aimed at resolving the dynamics of gene regulation networks, by using the quantitative demands on the shape of bacterial bet-hedging strategy distributions that are imposed by fluctuating selection environments. As a model system, we study the adaptation of the distribution of sporulation-initiation timing in *B. subtilis* to randomly changing environments and cue reliability.

Subproject: Evolutionary Modeling; at the Institute of Environmental Sciences (CML)

This subproject focuses on modeling state-dependent bacterial population dynamics and examining which bet-hedging strategies are evolutionarily stable in different selection regimes. Models will include size-, age-, and sporulation state dependence, as well as environmental information such as cue reliability.

Requirements: PhD degree in Mathematics, Physics or Mathematical Biology, with a specialization in modeling empirical systems.

Subproject: Bioinformatics; at the Mathematical Institute (MI) and the Leiden institute of Advanced Computer Science (LIACS).

This subproject focuses on mathematical modeling, simulation and parameter identification of the relevant gene regulation network. The project aims at developing models that properly capture the stochastic effects of signaling and gene regulatory networks. Simulations will be using stochastic simulation algorithms (SSA). Parameter identification will involve niching genetic algorithms for SSA search landscapes.

Requirements: PhD degree in Mathematics, Computer Science or Computational Biology, with a specialization in stochastic modeling and simulation or genetic algorithms.

Applications: send a CV + accompanying letter stating the subproject to Patsy Haccou: haccou@math.leidenuniv.nl (Can also be contacted for further information or a complete project description). Application deadline: 15 september 2009.

Please contact: Patsy Haccou

Postdoctoral Bioinformatician at Amsterdam, NL

Deadline for applications: 2009-09-15

INTEGRATIVE, PATHWAY-BASED MODELS FOR RESPONSE PREDICTION IN COLORECTAL CANCER

The development of novel anti-cancer agents that target growth signaling pathways presents many challenges, the most demanding being to identify which tumours are dependent on a given pathway

and thus the patient group most likely to respond to therapy. Current approaches rely on measuring individual markers that act as surrogates for pathway status, but give little information on activation state or cellular addiction.

This project will develop in silico techniques to integrate and analyse genetics, genomics and protein level data with a focus on the PI3K and MAPK signaling networks. A unique data set has been specifically assembled for this project consisting of

- whole genome transcript data (Affymetrix HG_U133 Plus 2),
- whole genome high resolution copy number data (Agilent Human 244K),
- selected protein expression data using a reverse-phase array platform, plus
- mutation status of genes frequently modified in colorectal cancer.

This comprehensive molecular characterisation has been completed on 58 colorectal cell lines and 64 primary colorectal tumors. In addition, the pharmacological sensitivity of the colorectal cell lines to a range of targeted drugs is known.

Specific objectives for this project include

- Model pathway status in colorectal tumours and cell lines through integrative analysis of the molecular data
- Intersect tumour and cell line models to assess how accurately cell lines recapitulate human disease at the pathway level
- Stratify colorectal tumours and cell lines on the basis of predicted pathway activation

The results from this project will not only increase knowledge of colorectal cancer and molecular stratification techniques, but provide valuable information on the utility of cell line models for generating pre-clinical hypotheses for personalised medicine.

CANDIDATE REQUIREMENTS

We seek an individual with knowledge of both informatics and biology, with particular interest in translating complex data into testable hypotheses. Candidates should fulfill the following criteria:

- PhD (or equivalent) in one of the following areas: bioinformatics, engineering, computer science, statistics or physics.
- Knowledge of biology, particularly signaling pathways.

LOCATION

The position is primarily embedded within the Bioinformatics and Statistics group led by Dr Lodewyk Wessels (<http://bioinformatics.nki.nl>) at the Netherlands Cancer Institute, Amsterdam. The candidate will also spend time in the AstraZeneca Oncology Informatics group, Alderley Park, UK led by Dr Tim French.

CONTACT DETAILS

Please contact Dr. Lodewyk Wessels, tel. +31 20 512 7987 or e-mail: l.wessels@nki.nl or Dr Tim French, Oncology Informatics, Discovery Medicine, tel. +44 1625-519922 or e-mail: Tim.French@astrazeneca.com. When applying please ensure you include a CV, list of publications and the names and addresses of at least two persons that can be approached to obtain further information. <http://bioinformatics.nki.nl>

CLOSING DATE

15 September 2009

*Please contact: [Dr. Lodewyk Wessels](mailto:Dr.Lodewyk.Wessels@nki.nl)
<http://bioinformatics.nki.nl>*

Postdoc in Physics of cell polarity, motility, and tissue morphogenesis at Torino, Italy**Deadline for applications: 2009-09-30**

The Institute for Cancer Cure and Research (IRCC) in Torino is going to open a system biology unit and is looking for candidates to fill two postdoctoral positions (3-year contract). A net salary of up to EUR 26K pa is offered, commensurate with qualifications and experience.

We are looking for highly motivated individuals who enjoy working at the interface between physics and quantitative biology, in tight interaction with experimental groups. Current research topics include statistical mechanical models for the establishment of cell polarity, motility and tissue morphogenesis. Particular attention will be given to candidates with a strong theoretical physics background and a genuine interest in biology, and/or good experience with biological and biophysical experimental techniques. For more information on the projects, see <http://staff.polito.it/andrea.gamba/research.html>.

The Turin area hosts several groups working at the interface between physics and quantitative biology at Turin Polytechnic, Turin University and the Institute for Scientific Interchange. The fourth largest Italian city, Turin offers a wide range of recreational, cultural, and educational opportunities.

Application details can be located at: <http://www.ircc.it/education/postdoc/jobfprc.html>.

*Please contact:
<http://www.ircc.it/education/postdoc/jobfprc.html>*