

# ESMTB Infoletter

## July 2010



[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 July 2010

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## Workshops

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**European Workshop of Young Researchers at Faculty of Mathematics, Universidad Complutense de Madrid (Spain)**

**Date: 2010-09-22 to 2010-09-24**

The workshop will take place at the Faculty of Mathematics of the Universidad Complutense de Madrid on 22-24 September 2010. It is organized by: Universidad Complutense de Madrid, Universidad Autónoma de Madrid, Universidad Carlos III de Madrid and Interdisciplinar Mathematical Institute (IMI).

This workshop is intended to broaden the scientific perspective of young researchers in mathematics and to encourage interactions with other young and senior mathematicians.

Interested young researchers in mathematics should contact [secreadm.imi@mat.ucm.es](mailto:secreadm.imi@mat.ucm.es)

[www.mat.ucm.es/vdrmat/workshop2010.htm](http://www.mat.ucm.es/vdrmat/workshop2010.htm)  
<mailto:secreadm.imi@mat.ucm.es>

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**Analysis of Complex Networks: Structure and Dynamics at Dipartimento di Elettronica e Informazione, Politecnico di Milano (Italy)**

**Date: 2010-09-28 to 2010-09-30**

This course is part of the teaching activities organized by the PhD Program in Information Technology at DEI. It is not only addressed to PhD students, but to all researchers working in any ar-

reas of science and engineering and interested in the theory and applications of complex networks. The aim of the course is to illustrate the basic theoretical notions in an introductory but rigorous fashion, and to complement them with some applications taken from very diverse areas.

For more information on the Italian Society for Chaos and Complexity and its activities please visit our website at <http://www.sicc-it.org> (currently under renovation) or feel free to contact me for any further information. The Society is active in promoting interdisciplinary research on Chaos and Complexity in Science, Engineering, Medicine and the Humanities. To suggest events, join the society, or for any other inquiry please visit our website or contact any member of the Executive Committee.

<http://acn2010.ws.dei.polimi.it/>  
<mailto:carlo.piccardi@polimi.it>

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**Modeling Angiogenesis: Joining Cells, Maths and Computers at Lorentz Center, Leiden (The Netherlands)**

**Date: 2010-10-04 to 2010-10-08**

The outgrowth of new blood vessels from pre-existing vessels, called angiogenesis, is a crucial step in myriad physiological and pathological mechanisms. Unfortunately, the complicated causes and effects of angiogenesis make it very difficult to control. Computational models and simulations help unravel both the basic mechanisms of angiogenesis and can help identify the steps in the mechanisms most amenable to intervention.

A wide range of mathematical and computational

models range from is currently available. Single cell-based models predict how vascular-like patterns follow from the behaviors and interactions of individual endothelial cells. Many discrete models describe the branching conditions of blood vessels, and predict the morphology of vascular trees near tumors. Continuum models often focus at the tissue level, and describe densities of blood vessels rather than individual vascular structures.

Despite the biological insights these mathematical models have produced, modeling rarely finds application in experimental angiogenesis research yet. Why is that? One reason is a different focus: experimental and pharmaceutical research necessarily focus on the molecular level, whereas most angiogenesis models take single interacting endothelial cells or vessel branches as the smallest units of their models. Another reason is the lack of predictive, quantitative models and the required quantitative experimental data to feed such models. We will need models that bridge organizational scales, by showing how molecular intervention modifies the behavior of endothelial cells and, consequently, changes the dynamics of angiogenesis.

Our workshop will host both experimental researchers and computational models working in vascular biology, endothelial cell biology, angiogenesis, and pharmaceuticals. We will a) identify the requirements for computational models to make a true impact in basic angiogenesis research, tissue engineering and drug innovation, b) inventory pre-existing and missing components of such a model, and c) discuss how we can couple such components.

<http://www.lorenzcenter.nl/lc/web/2010/407/info.php3?wsid=407>  
<mailto:filippo@lorenzcenter.nl>

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## Schools

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**CPIB Summer School: Mathematical Modelling for Biologists at Sutton Bonington Campus, University of Nottingham (UK)**

**Date: 2010-09-06 to 2010-09-09**

The third annual CPIB Summer School, co-organised by CPIB and SIGNET, will take place

6-9 September 2010 at Sutton Bonington Campus, University of Nottingham. The workshop will begin at 10:00 on Monday 6 September and finish at 16:00 on Thursday 9 September.

The aims of our summer school are:

- To introduce modelling and quantitative approaches to biologists
- To encourage experimental design which generates data suitable for modelling

Target audience:

Open to all PhD students and postdoctoral researchers with a biological background (not limited to plants!) are particularly encouraged to attend, and no prior experience is assumed. Places are limited to 40 and applicants are asked to state their background and motivation for attending. Priority will be given to applicants who will benefit most from the course.

Programme:

Day 1: Data, Networks and Models  
 Day 2: Multi-variable models  
 Day 3: Parameter estimation and sensitivity; Stochastic models  
 Day 4: Multicellular modelling

Registration:

To apply to attend the course, please fill in the online application form. The deadline for applications is 6 August 2010.

If you have any questions or concerns, please contact [mirela.axinte@cpib.ac.uk](mailto:mirela.axinte@cpib.ac.uk)

<http://www.cpib.ac.uk/2010/cpib-summer-school-mathematical-modeling>  
<mailto:mirela.axinte@cpib.ac.uk>

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## Open Positions

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**PhD on morphogenesis of Drosophila Wing at Florida State University, Florida (USA)**

**Deadline for applications: 2010-07-31**

A postdoctoral position is available to model the development of the Drosophila wing. This is part of a larger project to understand the relationship

between genetic and phenotypic variation and evolutionary change using the *Drosophila* wing as a model organ. The position is part of a collaborative project involving David Houle (Florida State University), Isaac Salazar-Ciudad (Universitat Autònoma de Barcelona) and Ian Dworkin (Michigan State University). Primary responsibility of this position is construction of a cell-based model of morphogenesis, differentiation and growth that will interface with sub-cellular models of gene interactions. The winning candidate will also collaborate with a larger team to compare model to empirical results, to test and refine the model, and use the model to make evolutionary predictions. Preference will be given to candidates with experience in computational and analytical modeling, and a desire to fuse developmental, genetic and evolutionary approaches to fundamental questions about the relationship between genotype and phenotype.

The position is for an initial period of two years, and may be extended for an additional two years.

It will be supervised by Houle and Salazar-Ciudad. Applications should be submitted as a single pdf file and include a curriculum vitae, a summary of research accomplishments and future research objectives, and the names and contact information for at least one professional reference (and preferably three). Review of applications will begin July 15, 2010 and continue until a suitable candidate is identified. Application materials should be sent electronically to David Houle (dhoule@bio.fsu.edu). Florida State University is an Affirmative Action / Equal Opportunity Employer.

Candidates who are attending the Society for the Study of Evolution meeting are encouraged to contact Houle (dhoule@bio.fsu.edu) to arrange an interview. Candidates who are attending the European Evo Devo meeting are encouraged to contact Salazar-Ciudad (Isaac.Salazar@uab.cat) to arrange an interview.

*Please contact: [David Houle](#)*