

# Modelling Approaches in Epigenetics 2014



Thursday, March 20, 2014 - Friday, March 21, 2014, Christ's College, Cambridge, UK

Registration deadline: 28<sup>th</sup> February 2014

## Preliminary Programme:

### Thursday, March 20th

10:00 - 11:00 - Introduction and Keynote Lecture: Thimo Rohlf (University of Leipzig, Germany)

"A computational model of stem cell differentiation and ageing based on dynamic interactions between histone modifications and DNA"

11:00 - 11:30 - Coffee Break

11:30 - 13:30 - Participants' Short Presentations

13:30 - 14:30 - Lunch Break

14:30 - 15:30 - Pnar Pir (Babraham Institute, Cambridge, UK)

"Modelling of Transcriptional Regulation as a Function of Epigenetic Marks and TF Binding Patterns on Promoter Regions"

15:30 - 16:00 - Coffee Break

16:00 - 17:30 - Discussion Session: Modelling Chromatin State/Gene Expression/Cell Differentiation  
Drinks and dinner

### Friday, March 21st

9:00 - 10:00 - Keynote Lecture: Martin Howard (John Innes Centre, Norwich, UK)

"Modelling the quantitative epigenetics of vernalization"

10:00 - 11:00 - Vera Pancaldi (CNIO, Madrid, Spain)

"DNA methylation and cellular heterogeneity in cancer"

11:00 - 11:30 - Coffee Break - Gathering for Group Photo

11:30 - 12:30 - Discussion: Time Scales and Stochasticity of Epigenetic Phenomena

12:30 - 13:30 - Lunch Break

14:00 - 14:30 - Discussion: Epigenetics Data: What is available? What is missing?

14:30 - 15:00 - Discussion: Modelling trans-generational inheritance

15:00 - 15:30 - Coffee Break

15:30 - 16.30 - Discussion and Conclusions from the Meeting - Closing Remarks

## Themes discussed might include but are not limited to:

Mathematical representation of:

The relationship between chromatin state and gene expression

Spreading of chromatin states

Coupling between DNA sites and how this affects the establishment of chromatin marks

3D genome, mutations, evolution

Differentiation and development

Mechanisms for trans-generational inheritance

Time scales of epigenetic phenomena

Missing experiments in epigenetics

Discussion sessions will be arranged to maximize exchange between participants and to let interesting themes emerge from the meeting. In the Participants' Short Presentations Session, attendees will have a chance to briefly introduce themselves and their projects (5 min, 1-3 slides).

For more information please email Vera Pancaldi and Pnar Pir at [modapepi@gmail.com](mailto:modapepi@gmail.com)