

Program of the workshop  
«**Statistical Physics and Information Processing in Biology**»  
Center for Physics, Les Houches  
February 29- March 4, 2016  
(organized by A Walczak and V Hakim)  
**Talks 30mn +10mn questions**

## **Monday February 29th**

8h45            Introductory remarks  
9h00 **Gijsje Koenderink** Self-organization of the cellular cytoskeleton  
9h40 **Pascal Silberzan** Active cellular nematics  
10h20           Coffee break  
11h **Irene Giardina** Collective turns and information propagation in bird flocks  
11h40 **Greg Stephens** Towards a biophysics of organisms: leveraging low-dimensionality to resolve coiled shapes in *C. elegans*  
12h20           **End of morning session**  
  
12h30           Lunch  
  
17h30 **Nicolas Minc** Cell polarity and mechanics in fission yeast  
18h10 **Julien Tailleur** Transitions to collective motion  
18h50           Poster spotlights  
  
19h25           **End of afternoon session**  
  
19h30           Dinner  
21h    Posters and drinks

## **Tuesday March 1st**

8h45 **Tom Shimizu** Individuality in bacterial chemotaxis signaling revealed by single-cell FRET  
9h25 **Thierry Mora** Limits to sensing  
10h05           Coffee break  
10h45 **Peter Swain** Multiple input pathways mitigate speed-accuracy trade-offs in a MAP kinase signalling network  
11h25 **Tetsuya Kobayashi** Information and Fitness in Biological Adaptation  
12h05           **End of morning session**

12h30        Lunch

18h00 **Mogens Jensen**    Arnold Tongues in Cell Dynamics

18h40        Poster spotlights

19h20        **End of afternoon session**

19h30        Dinner

21h          Posters and drinks

## Wednesday March 2nd

8h45 **Sander Tans**        Bacterial growth and evolution

9h25 **Kim Sneppen**       Ribosome dynamics and the life of mRNA in E.coli

10h05        Coffee break

10h45 **Simona Cocco**      Inverse statistical physics approaches for the modeling of  
protein families

11h25 **Erik Aurell**        The bulk and the tail of minimal absent words in genome  
sequences

12h05        **End of morning session**

12h30        Lunch

18h00 **Antonio Celani**      Infomax strategies for an optimal balance between  
exploration and exploitation

18h40        Poster spotlights

19h20        **End of afternoon session**

19h30        Dinner

21h          Posters and drinks

## Thursday March 3rd

- 8h45 **Rosalind Allen** Bacterial growth and the efficacy of antibiotic treatment
- 9h25 **Gilles Charvin** Single cell analysis of training and inheritance during the adaptation to oxidative stress
- 10h05 Coffee break
- 10h45 **Namiko Mitarai** Phage-Bacteria interaction in Space: Plaque formation dynamics by temperate phages
- 11h25 **Sorin Tanase Nicola** Population dynamics of signaling phenotypes
- 12h05 **End of morning session**
- 12h30 Lunch
- 18h00 **Gasper Tkacik** Information processing in neural and regulatory networks
- 18h40 **Vincent Hakim** Learning by trial-and-error with an estimated global error
- 19h20 **End of afternoon session**
- 19h30 Dinner
- 21h Posters and drinks

## Friday March 4th

- 9h00 **Benoit Sorre** Model systems to study embryonic patterning
- 9h40 **Ulrich Gerland** Dual sensing as a regulation strategy
- 10h20 Coffee break
- 11h **Aleksandra Walczak** Dynamics in early fly development
- 11h40 **Olivier Martin** Signaling in response to auxin in plants: built for dynamical susceptibility
- 12h20 **End of morning session**
- 12h30 Lunch
- 14h00 **End of workshop**