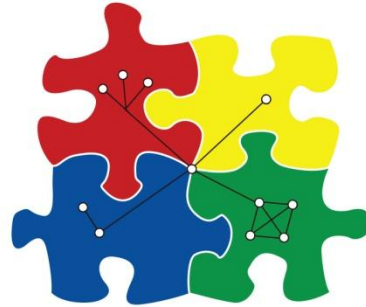


# NETADIS

Statistical Physics Approaches  
to  
Networks Across Disciplines



## Netadis Conference Statistical Physics Approaches to Networks Across Disciplines 2015

Devonport House, Greenwich, London 20 - 23 October 2015

### PROGRAMME

#### Tuesday 20 October 2015

Afternoon                      Arrival  
**19.00**                              **Registration and Evening Reception**

#### Wednesday 21 October 2015

**07.00 - 09.00**                      **Breakfast**

**09.00 - 09.10**                      **Welcome by Peter Sollich, King's College London**  
*Session 1 (Chair: Andrea Pagnani)*

**09.10 - 10.10**                      **Rutger Hermesen, Utrecht University: "Evolution driven by environmental heterogeneity"**

**10.10 - 10.40**                      **Barbara Bravi, King's College London: "Path integral approaches to subnetworks description and inference"**

**10.40 - 11.10**                      **Araks Martirosyan, "La Sapienza" Universita di Roma: "Probing the Limits to MicroRNA-Mediated Control of Gene Expression"**

**11.10 - 11.30**                      **Tea/Coffee Break - Poster Session**  
*Session 2 (Chair: Andrea De Martino)*

**11.30 - 12.00**                      **Silvia Grigolon, Université Paris-Sud, Orsay**  
"Modelling and inference for biological systems: from auxin dynamics in plants to protein evolution"

**12.00 - 13.00**                      **Alfredo Braunstein, Politecnico di Torino: "Inference in Epidemics"**

- 13.00 - 14.00**                    **Lunch - Poster Session**  
*Session 3 (Chair: Luca Dall'Asta)*
- 14.00 - 14.30**                    **Ryan Cubero**, Abdus Salam ICTP, Trieste: "Network Approaches Towards Understanding miRNA-Mediated Cardiomyocyte Proliferation"
- 14.30 - 15.30**                    **Erik van Nimwegen**, University of Basel: "Inferring the structure, function, and evolution of gene regulatory networks"
- 15.30 - 15.50**                    **Tea/Coffee Break – Poster Session**
- 15.50 - 18.00**                    **Discussion - Poster Session**
- PUBLIC EVENING TALKS ON SYSTEMIC RISK IN FINANCE**  
*Session 4 (Chair: Reimer Kuehn)*
- 18.00 - 19.00**                    **Jean-Philippe Bouchaud**, Chairman, Capital Fund Management & Ecole Polytechnique: "Understanding economic crises with agent-based models and numerical simulations"
- 19.00 - 20.00**                    **Claus Puhr**, Head of Stress Testing and Strategy, Oesterreichische Nationalbank: "The banking system as network – a supervisor's perspective"
- 20.00**                                **Buffet Reception**

## Thursday 22 October 2015

- 07.00 - 08.40**                    **Breakfast**  
*Session 5 (Chair: Silvio Franz)*
- 08.40 - 09.40**                    **Michael Lässig**, University of Cologne: "Influenza evolution as a non-equilibrium inference problem"
- 09.40 - 10.10**                    **Christoph Feinauer**, Politecnico di Torino: "The Inverse Statistical Mechanics Approach to Protein Sequence Data: Beyond Contact Prediction"
- 10.10 - 10.30**                    **Tea/Coffee Break – Poster Session**  
*Session 6 (Chair: Luca Leuzzi)*
- 10.30 - 11.30**                    **Sergey Skipetrov**, Grenoble, LPMMC – CNRS: "Anderson localization and random lasing in a Euclidean random matrix model"
- 11.30 - 12.00**                    **Payal Tyagi**, "La Sapienza" Università di Roma: "Inference of coupling of waves in non-linear disordered medium"
- 12.00 - 13.00**                    **Lunch – Poster Session**
- 13.00 - 15.00**                    **Guided Tour of Greenwich**  
*Session 7 (Chair: Erik Aurell)*

- 15.00 - 16.00**            **Nicolas Brunel**, University of Chicago: “Inferring learning rules in circuits of cortical neurons”
- 16.00 – 17.00**            **Fernando Vega-Redondo**, Università Bocconi, Milano & IGIER: “Production Networks”
- 17.00 – 17.30**            **Tea/Coffee Break – Poster Session**
- Session 8 (Chair: Matteo Marsili)*
- 17.30 – 18.00**            **Pierre Paga**, King’s College London: “Tail risks in networks”
- 18.00 – 18.30**            **Alberto Guggiola**, LPT-ENS: “Extreme events on networks: rare random walks and spreading maximization”
- 18.30 – 19.30**            **Fabrizio Lillo**, Scuola Normale Superiore, Pisa: “Statistical network models for systemic risk”
- 20:00**                      **Conference Dinner**

## **Friday 23 October 2015**

- 07.00 - 09.00**            **Breakfast**
- Session 9 (Chair: Guilhem Semerjian)*
- 09.00 - 10.00**            **Yoshiyuki Kabashima**, Tokyo Institute of Technology: “Cavity approach to robustness analysis of complex networks”
- 10.00 - 10.30**            **Ludovica Romano**, TUB, Berlin: “Inference in kinetic Ising models: Bayes estimators and learning curves”
- 10.30 – 11.00**            **Claudia Battistin**, Kavli Institute, Trondheim: “Inference in kinetic Ising models with hidden nodes: a message passing algorithm”
- 11.00 - 11.20**            **Tea/Coffee Break – Poster Session**
- Session 10 (Chair: Manfred Opper)*
- 11.20 - 12.20**            **Ralf Herbrich**, Machine Learning, Amazon: “*Machine Learning at Amazon*”
- 12.20 - 12.50**            **Gino Del Ferraro**, KTH Stockholm: “Dynamic cavity method for spin models on sparse graph of arbitrary connectivity symmetry”
- 12.50 - 14.00**            **Lunch – Poster Session**
- Session 11 (Chair: Peter Sollich)*
- 14.00 - 15.00**            **David Saad**, Aston University: “Route optimisation, congestion and selfish decisions”
- 15.00 - 15.30**            **Caterina De Bacco**, Université Paris-Sud, Orsay: “*Routing optimization on networks: a statistical physics approach*”

**15.30 - 15.50**

**Tea/Coffee Break – Poster Session**

**15.50 - 16.50**

**Luca Cardelli, Microsoft Research: “Morphisms of Reaction Networks”**

**16.50 - 17.00**

**Summing up by Peter Sollich**