EUROPEAN SCIENCE FOUNDATION
SETTING SCIENCE AGENDAS FOR EUROPE

ESF Programme on Frontiers in Functional Genomics

From Phenotypes to Pathways: Inferring genetic architecture from perturbation maps

Cambridge (UK), 15-17 September 2011

Convened by:

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Co-sponsored by

CancerPathways

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Main Objectives of the Workshop:

Modern systems genetics approaches are of key importance at the forefront of biomedical research. High-throughput phenotyping approaches make it possible to describe a biological response to thousands of experimental perturbations. This interdisciplinary workshop discusses novel experimental and computational strategies to use perturbation screens for dissecting cellular regulatory networks and disease mechanisms.
We have assembled a diverse panel of leading international experts covering a wide range of research areas, model organisms and experimental techniques. Together we will define the main unanswered questions in the field and identify the next key challenges: **Which (computational or experimental) developments will drive the field forward in the next years?**

Workshop Agenda

The workshop will center around five key areas:

1. **Designing phenotypes:** What are the challenges to utilize quantitative phenotypes?
2. **From phenotypes to mechanisms:** what do perturbation effects tell us about protein function and cellular networks?
3. **Gene-gene and gene-drug interactions:** How do epistatic effects relate to cellular networks and pathways?
4. **Modeling the cell:** how can we predict phenotypes and synthetic interactions?
5. **Integrative design and analysis:** what other complementary data types and experiments can maximize the information gained from perturbations?

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WORKSHOP PROGRAMME

Thursday, 15 September 2011

Morning	*Arrival*
12.00-13.30	*Buffet lunch*
13.30-14.00	Welcome by Convenors (Florian Markowetz and Michael Boutros)
14.00-18.00	**Afternoon session** (Chair: Michael Boutros)
14.00-15.30	Julie Ahringer, Roderick Beijersbergen, Robin Ketteler
15.30-16.00	Coffee break
16.00-17.30	Jean-Philippe Vert, Niko Beerenwinkel, Jennifer Rohn, Hanah Margalit
17.30-18.00	General discussion (lead by Wolfgang Huber and Frank Holstege)
19.00-22.00	**Dinner and Get together in local Pub**

Friday, 16 September 2011

09.00-12.00	**Morning session** (Chair: Hanah Margalit)
09.00-10.30	Michael Boutros, Sebastian Nijman, Klaas Mulder
10.30-11.00	Coffee break
11.00-12.30	Frank Holstege, Chad Myers, Anders Blomberg
12.30-13.00	General discussion (Achim Tresch and Jussi Taipale)
13.00-14.00	Lunch break
14.00-18.00	**Afternoon session** (Chair: Rainer Spang)
14.00-15.30	Diego Di Bernardo, Paul Wilson, Lodewyk Wessels
15.30-16.00	*Coffee break*
16.00-17.30	Jussi Taipale, Blaz Zupan, Artemis Hatzigeorgiou, Wolfgang Huber
17.30-18.00	General discussion (lead by Chad Myers and Sebastian Nijman)
18.00-19.00	*Dinner at college*
19.00-21.00	**At the bar: How to integrate experiments and computation?**

Saturday, 17 September 2011	
09.00-12.00	**Morning session** (Chair: Artemis Hatzigeorgiou)
09.00-10.30	Sven Nelander, Rainer Spang, Yves Moreau
10.30-11.00	Coffee break
11.00-12.30	Jan Tavernier, André Mäurer, Ben Lehner
12.30-13.00	General discussion (lead by Jean-Philippe Vert and Anders Blomberg)
13.00-14.00	*Lunch break*
14.00-18.00	**Afternoon session** (Chair: Yves Moreau)
14.00-15.30	Jasmin Fisher, Robert Gentleman, Julio Saez-Rodriguez
15.30-16.00	*Coffee break*
16.00-17.30	Tom Michoel, Achim Tresch, Florian Markowetz
17.30-18.00	**General discussion** (lead by Niko Beerenwinkel and Jan Tavernier)
	Plans for follow-up activities
18.00-19.00	*Dinner at college*
Sunday, 18 September 2010	
Morning	*Departure*