

EMBO Conference

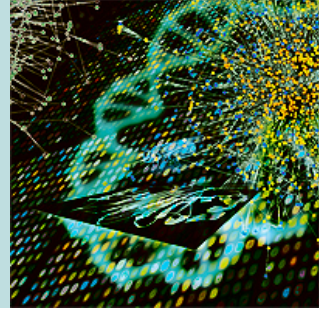
## From Functional Genomics to Systems Biology

EMBL Heidelberg, Germany

Saturday 8 November - Tuesday 11 November 2014

Registration deadline: Friday 10 October 2014

Abstract submission closed



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## Abstract Review

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## Event Information

**Event:** EMBO Conference: From Functional Genomics to Systems Biology

**Event Dates:** Saturday, 11/08/14 10:00 AM - Tuesday, 11/11/14 11:00 PM

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## Abstract - [Edit](#) | [Delete](#)

**Title:** Prospects of applied interactomics of oxidative status for molecular pathophysiology and pharmacology

### Abstract Text:

In humans, oxidative status represents metabolic and signaling state of all cellular compartments due to ubiquity of reactive intermediates formation-associated reactions. Thus, oxidative status promises versatile applications and incredible biological informativeness.

We have previously developed Oxidative Status Interactome Map intended to help investigators in planning experiments, elaborating diagnostic methods and revealing promising therapeutic targets (PMID: 23698602). Using this interactomic tool, we had successfully studied uterine cervical incompetence, and suggested a universal diagnostic approach (PMID: 24304328, 24504888).

We would like now to suggest two more interrelated biotechnological areas emanating from the practical oxidative status attributes. These are systems biology/interactomics-based molecular pathophysiology and pharmacology.

As seen from the systemic analysis of oxidative status, some of its pathways 1) are closely interrelated and overlapping, and 2) contain diversified cellular state sensors. Two oppositely directed algorithms based on this unique property of oxidative status are available. In the first case, profiling of the interactomic state of the interacting systems may be engaged in cases of heterogenous pathologies. The second algorithm relies on the same ideology, but it is applied in a reverse manner. In this case, not the lesions in specific signaling pathways are revealed, but rather

the modified pathways are qualitatively inventoried. Considering the prospects of the oxidative status-based technologies mentioned, we would like to draw the conference participants' attention to this promising field requiring collective effort and collaboration.

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