



**PhD Programme - Complex Systems for Life Sciences**

**Alumni Workshop**

March 8, 2019

Aula Magna Rettorato - Via Verdi 8

This workshop is intended to reunite the Alumni of the PhD Programme in Complex Systems for Life Sciences, to retrace individual professional experiences and to rediscover a common identity.

This PhD Programme was founded in 2003, when the Human Genome Project was about completion and when it became clear that the modern approach to living things will require the systematic description of all components. Genomes, proteomes, cell parts, cell communities and up to the organisms, together with the networks of dynamic interaction between the components, will constitute the scenery for modern biology and medicine.

Complex Systems are systems where the collective behavior of their parts entails emergence of properties that can hardly, if not at all, be inferred from properties of the parts. The physics of complex systems and mathematical modelling are essential cultural tools for understanding biological systems.

Consequently, we set *interdisciplinarity* as a pivotal feature of this PhD programme, not only by accepting students with various backgrounds, but also by implementing cross-disciplinary education.

During last 15 years, the Systems Biology approach has led to tremendous advances in Biology and Medicine, allowing on the one hand previously unimaginable levels of understanding and modeling biological phenomena; on the other hand, giving rise to completely new wide-screen technologies that are the basis of personalized medicine.

The workshop is part of the PhD Seminars series. Five Alumni will report their professional and scientific histories. Today's Students will present their work on Posters and discuss their projects with the Speakers and the other Alumni participating in this event.

**Scientific Programme**

9.30: Federico Bussolino: welcome and opening morning session

10.00: Sara Zanivan, PI, Beatson Institute Glasgow UK. "Tumour microenvironment & proteomics: bridging science with technology"

10.45: Ilaria Cascone, Associate professor, Université Paris Est Créteil, FR. "Vessels, tumour biology and translational research"

11.30: Mattia Pelizzola, PI Italian Institute of Technology, Milan. "From transcriptome to epigenome, and back?"

12.30 – 14.30 poster session + lunch

14.30: Chiara Fornari, Senior Scientist, AstraZeneca, Cambridge, UK. "Cancer, maths, and medicine: from living systems to theory"

15.15: Davide Corà, Assistant Professor at the Dept. of Translational Medicine, Piemonte Orientale University. "Fifteen years in gene regulation: from statistical approaches to network analysis of modern big data"

16 – 18: discussion with the Alumni (round table discussion, reservation required)