Dr Francesco Falciani PhD

Honorary Professor

School of Biosciences (/schools/biosciences/index.aspx)

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Postgraduate supervision

For a list of possible PhD projects offered by Dr Falciani:

www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Falciani (http://www.findaphd.com/search/customlink.asp?inst=birm-Biol&supersurname=Falciani)

Research

Research Theme within School of Biosciences: **Molecular and Cell Biology (/research/activity/cellbiology/index.aspx)**

Integrative Genomics Group (**http://biptemp.bham.ac.uk/index.html (http://biptemp.bham.ac.uk/index.html)**)

Our group is primarily interested in deciphering the complex biological processes underlying Cancer and Chronic Inflammation. Although apparently different, these two pathological processes share many characteristics and in many scenarios coexist in a pathological situation. We predominantly use a systems biology approach which starts from the identification of important molecular components and aims to infer the underlying structure of the molecular networks connecting these components. For this reason we are highly interdisciplinary group which develop and apply a wide range of computational and experimental approaches. The group include people with a theoretical physics, computer science, Bioinformatics and Biology backgrounds.

We also have interest in a number of related research areas which we choose to maximize the benefits of the methods we develop. These are primarily Environmental Biology where we have pioneered the application of advanced statistical modelling and network inference techniques for the development of mechanistic biomarkers of environmental pollution. We are also actively involved in Bacterial Pathogenesis where we have developed models representative of stress response associated to Host colonization.

Publications

- H. Lin, JA. Halsall, LP O'Neill, P Antczak, F Falciani, B Turner. X-linked genes are expressed at higher levels than autosomal genes in mouse embryonic stem cells as predicted by Ohono's hypothesis. Nature Genetics, in press
- Nil Turan, Susana Kalko, Anna Stincone, Ayesha Sabah, Katherine Howlett, S. John Curnow, Diego A Rodriguez, Marta Cascante, Laura O'Neill, Stuart Egginton, Josep Roca and Francesco Falciani. A Systems Biology Approach Identifies Molecular Networks Defining Skeletal Muscle Abnormalities in Chronic Obstructive Pulmonary Disease. PLoS Comput Biol. 2011 Sep;7(9):e1002129. Epub 2011 Sep 1.
- T.D. Williams, N. Turan, A.M. Diab, O. Hydrzuisko, Josep, J. Herbert, I. Katsiadaki , M. Leaver, B.P. Lyons, M. Mackenzie , G. Stentiford, J. Taggart, H. Wu, S.G. George, M.R. Viant, J. K. Chipman and F. Falciani Towards a System level understanding of non-model organisms sampled from the environment: A network biology approach. PLoS Comput Biol. 2011 Aug;7(8):e1002126. Epub 2011 Aug 25.
- Stincone A, Daudi N, Rahman AS, Antczak P, Anderson I, Lund P and Falciani F. A systems biology approach sheds new light on Escherichia coli acid resistance. Nucleic Acids Res. 2011 Sep 1;39(17):7512-28. Epub 2011 Jun 19.
- Rita Gupta, Anna Stincone, Philipp Antczak, Sarah Durant, Roy Bicknell, Andreas Bikfalvi and Francesco Falciani A Computational Framework for Gene Regulatory Network Inference that Combines Multiple Methods and Datasets. BMC Systems Biology 2011, 5:52

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