Wiener Biometrische Sektion
der Internationalen Biometrischen Gesellschaft
Region Österreich – Schweiz

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Einladung zum

Biometrischen Kolloquium

am Dienstag, dem 13.02.07, um 16:00 Uhr

im Seminarraum (3.Stock, Raum 88.03.513) der
Besonderen Einrichtung für Medizinische Statistik und Informatik
(MSI) der Medizinischen Universität Wien
Spitalgasse 23, 1090 Wien

Es spricht Frau Prof. Dr. Fátima Sánchez-Cabo, (Institute for
Genomics and Bioinformatics, Graz University of Technology,
Austria) zum Thema:

Statistical aspects and medical applications of „-omics" data integration

Wir ersuchen um zahlreichen Besuch für diesen sehr interessanten
und aktuellen Vortrag.

Werner Brannath   Thomas Lang
Präsident   Sekretär

Statistical aspects and medical applications of „-omics" data integration

Fátima Sánchez-Cabo

The completion of the human genome has only been the starting point for the understanding of complex human diseases, such as cancer. As more information accumulates, it seems clear that a comprehensive study of the underlying molecular mechanisms requires the integration of data in a high-throughput fashion and at all levels, i.e. sequence, genome, transcriptome, proteome and more. From a mathematical point, data from "-omics" technologies are difficult to use for modelling, due to their sparse structure, the high rate of false positives yielded and to the apparent infinity of both, predictor and outcome variables. Appropriate integration of different data sets might help to overcome such difficulties.

In this talk, I will be reviewing the main challenges currently faced for the analysis and integration of disparate data sources from the experimental and methodological perspectives. To exemplify the impact of such an approach on health, I will be focusing on two different topics: the reconstruction of regulatory networks for adipogenesis[1] and the improvement of outcome prediction for colorectal cancer patients[2].

[1] Hackl H*, Burkard TR*, Sturn A, Rubio R, Schleiffer A, Tian S, Quackenbush J, Eisenhaber F, Trajanoski Z. Molecular processes during fat cell development revealed by gene expression profiling and functional annotation. Genome Biol. 2005. 6:R108.

[2] Galon J, Costes A, Sanchez-Cabo F, Kirilovsky A, Mlecnik B, Lagorce C, Tosolini M, Camus M, Berger A, Wind P, Zinzindohoué F, Bruneval P, Cugnenc P-H, Trajanoski Z, Fridman W-H, Pagès F. Type, density, and location of immune cells within human colorectal tumors predicts clinical outcome. Science. 2006 313:1960-1964.