We heartily invite you to participate in the
Bertalanffy Lecture 2014: Systems Medicine by Prof. Dr.Dr.Dr. Felix Tretter

The Bertalanffy Center for the Study of Systems Science welcomes the renowned expert Prof. Tretter and invites you to join us for the Bertalanffy Lecture 2014 on Systems Medicine on **Friday, 19th December 2014, 15:00 at the Bertalanffy Center for the Study of Systems Science, Paulanergasse 13/5, 1040 Vienna, Austria.**

The talk by Prof. Tretter will **present his advanced systemic perspective** on **current developments in the new field of systems medicine,** and a critical view on the **opportunities and risks of the impacts** on the pharmaceutical industries, applied therapies, and the organizational level of medicine and our healthcare system to support transformations of care for the benefit of the people.

In 2012 multi-million research programs were initiated in Germany supported by the EU commission devoted to establish systems medicine since 2010. The field evolves now from basic research to the development of applications. Together with Prof. Tretter the Bertalanffy Center intends to found a Research Group to establish these promising future potentials in Austria, too. The first **open meeting** marks a **unique opportunity** for researchers from a variety of disciplines and representatives from industry, and from the private and governmental health care and insurance system **to connect** with us. If you are interested to join, please, send a message to stefan.blachfellner@bcsss.org. Please feel free to forward this invitation.

Prof. Dr.Dr.Dr. Felix Tretter

Prof. Dr.Dr.Dr. Felix Tretter is Professor for Clinical Psychology at the University of Munich and Vice-President of the Bavarian Academy of Addictions. Formerly he was Senior Physician of a Department for Addiction in a psychiatric hospital; his research interests are addiction, neurobiology, systems science, human ecology and philosophy. He studied Psychology, Medicine and Social Sciences at the University of Vienna and Munich and conducted experimental brain research for several years at the Max Planck Institute for Psychiatry in Munich.

Systems Medicine

Maintenance of health and the development of diseases are the result of complex dynamic interactions. Systems Medicine is the application of systems biology approaches to medical research and medical practice. Its objective is to integrate a variety of biological/medical data at all relevant levels of organization using the power of computational and mathematical modelling, from the level of inter- and intracellular molecular networks of the cell to the levels of the interdependence of humans and their environments.

As many side-effects of medications are caused by the linkage of different organ systems such as heart and lung, the immune system, endocrine system and nervous system, a new approach in medicine is necessary. These connections are statistically known as co-morbidity.

The first step towards systems medicine intended a better understanding of functions and dysfunctions of the organism by using computer simulations of cell and tissue processes. The connections can now be interpreted by such models that are based on data from inter- and intracellular molecular networks (cytokines, neurotransmitters, etc.).

At present, also clinical systems medicine is constituted that focusses on the interaction of organismic subsystems. Some protagonists call this the 4P medicine, for personalized (individual genome analysis), predictive, preventive and participative medicine (L. Hood, Institute for Systems Biology, Seattle) to develop innovative therapies and tailored preventive treatments.

The future outlook is a scenario in which the health care system itself might change based on these findings. A complementary research focus of the Bertalanffy Center in Service Systems Design for large scale, multi-stakeholder complex social systems like health care might be the next promising step.

The Bertalanffy Center for the Study of Systems Science

The Bertalanffy Center for the Study of Systems Science (BCSSS) is an Austrian independent research institute, internationally acknowledged as an ambassador for the systems science heritage and present state-of-the-art applied systems research. The Center focuses on the Foundation of Systems Science, Systemic Design and Managing Complexity for future oriented sustainable innovative solutions. For more information please visit www.bcsss.org