The journal **Annals of Operations Research** invites submissions of papers to a special volume on **Applications of Operations Research for Neuroscience.**

Neuroscience is a multidisciplinary science that is concerned with the study of the structure and function of the nervous system. It comprises aspects of physiology, cellular and molecular biology, as well as behavioral and cognitive science.

Recent technological and theoretical advances offer promising opportunities for better understanding of the nervous system at the quantitative level. New optogenetic, in vitro and in vivo multielectrode recording, neuroimaging, brain imaging, and other modern techniques provide high-quality data that can be used in elucidating the fundamental mechanisms of information processing in neural system. The rapidly growing pool of experimental data has triggered the development of new mathematical models, which can provide new insights into the functioning of the nervous system at various scales ranging from that of molecular biology to that of the organizational principles of behavior and cognition. Sophisticated analyses of intracellular signalling or dynamics in heterogeneous neural networks, conditional behavior or connections of brain regions in decision-making lead to theoretical problems addressed by operations research.

The special volume will cover a broad range of topics in the field of neuroscience, which use operations research approaches and methods. Potential topics include, but are not limited to, the following areas of neuroscience:

o intracellular signalling and regulation
o synaptic plasticity
o dynamics in heterogeneous neural networks
o intelligent systems and control
o perceptual, cognitive and behavioural functions
o learning and memory
o spatio-temporal network analysis
o combinatorial optimization
o signal and information processing
o neuroimaging and functional brain imaging processing
o computational modelling and simulation

The use of methods from modern operations research is a prerequisite for any paper submitted to this special volume to enter the reviewing process.

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Guest Editors: Erik Kropat, Ruben A. Tikidji-Hamburyan, Gerhard-Wilhelm Weber.

Important Dates: **Extended** submission deadline of full papers: October 1, 2015.

Submission Details: The format of manuscripts for the *Annals of Operations Research* as well as guidelines can be found on the web page of Springer, the publisher of the journal: http://www.springer.com/business/operations+research/journal/10479.

Authors should submit a cover letter mentioning that the paper is for a special volume and a manuscript via the journal's online submission site: http://www.editorialmanager.com/anor

When prompted, please select the article type "**S.I.: OR in Neuroscience**".

All papers submitted for publication will be carefully refereed. In case of any question please contact by e-mail one of the following guest editors:

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