



BioMed Research International

Special Issue on
Big Data and Network Biology 2015

CALL FOR PAPERS

From the beginning of the present millennium, science is going through two rapidly changing phenomena: one is that the capabilities of the computers and software tools are increasing from terabytes to petabytes and beyond, and the other is the advancement in molecular biological experiments producing piles of data related to genome and RNA sequence, protein and metabolite abundance, protein-protein and protein-DNA interaction, gene expression, 3D structure of omics molecules, and so on. As a natural consequence, these two fields have become complementary to each other bridged by other branches of science, e.g., statistics, mathematics, physics, chemistry, and so on. Thus, the combination of versatile knowledge caused the advent of big data biology, network biology, and many other new subjects.

Network biology facilitates the system-level understanding of the cell or cellular components and subprocesses. Big biological data can be transformed into versatile networks, and therefore big data biology and network biology are linked to each other. In this special issue, we are calling papers on new ways to collect, store, retrieve, filter, integrate, analyze, and share biological data, novel analytical tools, and novel information extracted from big biological data and biological networks.

Potential topics include, but are not limited to:

- ▶ Next generation sequencing for custom genomics
- ▶ Microarray analysis and disease genomics
- ▶ Protein-protein interaction, gene regulatory, and metabolic and signaling networks
- ▶ Reverse engineering of metabolic networks
- ▶ Biomarkers and drug discovery
- ▶ Networks of drugs and diseases
- ▶ Effects of metabolites on human health
- ▶ Systems biology and synthetic biology
- ▶ Omics databases and data analysis

Authors can submit their manuscripts via the Manuscript Tracking System at <http://mts.hindawi.com/submit/journals/bmri/bioinformatics/bdnb15/>.

Lead Guest Editor

Shigehiko Kanaya, Nara Institute of Science and Technology, Nara, Japan
skanaya@gtc.naist.jp

Guest Editors

Md. Altaf-Ul-Amin, Nara Institute of Science and Technology, Nara, Japan
amin-m@is.naist.jp

Samuel K. Kiboi, University of Nairobi, Nairobi, Kenya
samuel.kiboi@uonbi.ac.ke

Farit M. Afendi, Bogor Agricultural University (IPB), Bogor, Indonesia
fmafendi@ipb.ac.id

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