

## **Tentative Outline**

### **Special Issue for PROTEIN & PEPTIDE LETTERS**

*Guest Editor: Yudong Cai*

# **THE APPLICATION OF SYSTEMS BIOLOGY AND BIOINFORMATICS METHODS IN PROTEOMICS, TRANSCRIPTOMICS AND METABOLOMICS**

#### **Aims & Scope:**

The main target of this special issue is to provide recent progress on the application of computational methods from systems biology and bioinformatics into proteomics, transcriptomics and metabolomics. The approaches including data mining, different equations and graph theory have been applied to these areas and become as powerful tools to analyze and predict the functions and networks of proteins, compounds and genes. The articles of this issue will focus on research of protein subcellular locations prediction, protein-protein interaction prediction, protein quaternary structure prediction, metabolic pathways analysis and prediction, miRNA-mediated regulation networks analysis, biomarker detection based on mass spectrometry data and enzyme properties prediction.

#### **Keywords:**

proteins, compounds, genes, data mining, different equations, graph theory, protein subcellular locations, protein-protein interaction, protein quaternary structure prediction, metabolic pathways, miRNA-mediated regulation networks, biomarker detection, mass spectrometry, enzyme properties

#### **Subtopics:**

1. MicroRNA-mediated Regulation in the Mammalian Circadian Rhythm
2. Prediction of optimal pH and temperature of cellulases using neural network
3. Prediction of Metabolic Pathways in Lipid Metabolism Based on Ensemble Learning
4. Improved candidate biomarker detection on mass spectrometry data using Hilbert

Huang transform

5. iLoc-Virus: A multi-label learning classifier for identifying the subcellular localization of virus proteins with both single and multiple sites
6. PSCL: Predicting protein subcellular localization in plants based on optimal functional domains
7. Prediction of protein quaternary structure with feature selection and analysis based on protein biological features
8. Analysis of metabolic pathway using hybrid properties

**Submission deadline for Authors:**

September 2011