

Workshop held in conjunction with
IEEE International Conference on
Bioinformatics and Biomedicine (BIBM)



Important Dates:

Submission deadline
September 15th, 2014

Acceptance notification
September 30th, 2014

Camera-ready papers
October 10th, 2014

Workshop
November 2-5, 2014

Organization:

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Submission:

Papers should be submitted via the online system (in PDF) and must not exceed 8 pages (in IEEE 2-column format).

All accepted papers will be published in the IEEE BIBM Workshop Proceedings and will appear in IEEE Xplore.

Selected papers will be invited to a special issue of *Beilstein Journal of Nanotechnology* (Impact Factor: 2.37, Open Access, No Publication Fee).

Introduction

As the mounting concern regarding the potential impact of nanotechnology on the environment and human health, there is a global drive to ensure that the development of beneficial nanotechnologies is accomplished in a responsible manner so as to avoid adverse environmental and human health impacts. Therefore, better understanding and mapping of the pharmacology and toxicology of nanomaterials are urgently required in order to provide the needed knowledgebase/guiding principles for the development of safe-by-design nanomaterials and nanomedicines. Accomplishing the above requires further investigation and development in the recently emerged field of nanoinformatics for acquisition, processing, visualization, management (collection, validation, storage and sharing), and interoperation of large amounts of data, information, and knowledge involved with nanotechnology processes and materials. This workshop aims to provide a forum for nanoinformatics community to exchange ideas and discuss the latest research developments across broad aspects of nanomedicine and environmental health impact assessment of nanomaterials.

Topics of the Workshop include (but are not limited to):

- Data management and database development for nanomaterials
- Ontology and meta-data design for nanomaterial data
- Nanomaterial data standards and interoperation/sharing protocols
- Nanomaterial characterization (i.e., physicochemical/structural properties)
- Text/Literature mining for nanomaterial data collection and integration
- Analysis/Quantification for nano-images (e.g., TEM images of nanomaterials, images generated from in-vivo high-throughput screening of nano-bioactivity)
- Assessment of the value of information in nanomaterial data
- Data mining/Machine learning for nanomaterial data, particularly the development of (quantitative) structure-activity relationships for nanomaterials
- Simulation for nanomaterial fate & transport, nano-bio interactions
- Computing applications for nanomedicine (e.g., drug delivery systems (nano-excipient), diagnosis and prevention, and safe disposal of nanomedicine as household goods)
- Visualization of nanomaterial data
- Environmental and health risk assessment, life-cycle analysis, and regulatory decision making for nanomaterials
- Assessment of ethical and social issues of nanotechnology
- Infrastructure (frameworks/software/tools/resources) for nanoinformatics