

IEEE JOURNAL OF BIOMEDICAL AND HEALTH INFORMATICS

J-BHI Special Issue on “Integrative Sensor Networks, Informatics and Modeling for Precision and Preventative Medicine”

The topics of integrative sensor networks, informatics and modeling bring together the tightly coupled and rapidly developing fields of biomedical and health informatics and body sensor networks. Biomedical and health informatics encompasses methods to extract and communicate information from data in order to impact health, healthcare, life sciences and biomedicine. Body sensor networks provide one means to measure the needed data, through continuous monitoring in both clinical and free-living environments. Recent developments in these areas will be highlighted at two co-located conferences: the 2019 IEEE-EMBS International Conferences on Biomedical and Health Informatics (BHI'19) and Wearable and Implantable Body Sensor Networks (BSN'19) (<https://www.bhi-bsn-2019.org>).

Biomedical and health informatics topics include: predictive models, databases, and big data analytics that optimize the acquisition, transmission, processing, monitoring, storage, retrieval, analysis, visualization and interpretation of vast volumes of multi-modal biomedical data, as well as related social, behavior, environmental, and geographical data. These technologies are being deployed in solutions that integrate key technologies including machine learning, artificial intelligence, Internet of Things, mHealth, e-Health, human computer interface, telemedicine, bioinformatics, sensors, imaging, and public health monitoring, to achieve patient-centric and outcome-driven effective health care.

Body sensor networks provide innovative ways to improve treatment outcome and patients' comfort. They offer novel ways to measure physiology, behavior observations from users. Leveraging innovative systems, communication modules, on-chip and off-line data processing and modeling, these measurements are turned into actionable information. Formation of closed-loop body sensor networks with therapeutic and interventional functions is becoming a reality.

Only original research contributions will be considered. Topics of interest include, but are not limited to, the following:

- Bioinformatics (including biomedical sensor, signal and image processing)
- Behavioral Informatics
- Big data analytics and machine learning
- Clinical and public health informatics
- Precision medicine and disease-oriented informatics
- Prototyping of body-worn, ingestible and implantable sensor networks
- Novel chemical, biological and textile body sensors
- Flexible, stretchable, ultralow power or battery-less electronic sensors and systems
- Body area communication protocols, models and theories;
- Security, privacy and trust in body sensor networks

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