Area 1: Wireless sensor and robot networks

(Recent CFP: http://www.wikicfp.com/cfp/servlet/event.showcfp?eventid=56516&copyownerid=90192)

Possible topics include, but are not limited to:

• Autonomous sensor networks

• Emergent behavior in WSRN

• Modeling and simulation of WSRN

• WSRN architectural and operational models

• Optimal control of networked robots

• Robot advanced motion control by WSRN

• Modeling and control of flying robots

• Autonomic and self-organizing coordination and communication

• Sensor-robot and robot-robot coordination

• Energy-efficient and real-time communication protocols

• Bandwidth-efficient and delay-tolerant communication protocols

• Distributed control and management in WSRN

• Neighborhood discovery and mobility management

• Communication protocols for swarms of mobile robots

• Map exploration and pattern formation of mobile robots

• Robot task assignment

• Biologically inspired communication

• Ecological systems

• Architectures and topology control

• Localization in WSRN

• Probabilistic integration in WSRN

• Quality of service, security and robustness issues

• Applications and prototypes

• Hybrid networks and wireless Internet

• M2M and D2D communications

• Data management, gathering, aggregation and query processing

Area 2: Vehicular networks and transportation systems

Vehicular networks:

(Recent CFP: http://www.journals.elsevier.com/ad-hoc-networks/call-for-papers/special-issue-on-advances-in-vehicular-networks)

• Applications of vehicular networks, including ITS

• Vehicle-to-vehicle (V2V) communications

• Vehicle-to-infrastructure (V2I) communications

• Vehicle-to-X (V2X) communications (e.g., with bicyclists, pedestrians, etc.)

• In-vehicle communications

• Radio technologies for V2X (radio resource management, propagation models, antennas, etc.)

• Protocols for vehicular networks (MAC / link layer, routing, mobility management, dissemination, transport, applications etc.)

• Architectures, algorithms and protocols for data dissemination, processing, and aggregation in vehicular networks

• Security, privacy, liability, and dependability in vehicular networks

• Network and QoS management for vehicular networks

• Simulation and performance evaluation techniques for vehicular networks

• Results from experimental systems, testbeds, and pilot studies

• Impact assessments of vehicular networks on safety, transportation efficiency, and the environment

• Communications related to electric and hybrid vehicles

• Heterogeneous networking approaches (multi-radio, multi-application)

• Integration of V2V with on-board systems and networks

Intelligent transportation systems:

(https://en.wikipedia.org/wiki/Intelligent\_transportation\_system)

• Localization and wireless communications/networking for collision avoidance

• Traffic Management

• Traveler Information Services

• Traffic Data Collection and Analysis

• Traffic Estimation/Prediction

Area 3: Wireless health care networks

(Recent CFP: http://mobihealth.name/2016/show/cf-papers)

• Advances in sensor devices for biomedical monitoring

• Miniaturization of wireless devices and micro sensors for medical applications

• RF Integrated Circuits for low power medical applications

• Printable-flexible-stretchable electronics for wearable systems

• Personal area networks and body area sensor networks

• High data rate wireless protocols for biosignals

• Heterogeneous wireless technologies and their co-existence in clinical environments

• Ad hoc wireless networks for enhanced monitoring

• Health monitoring

• Healthcare telemetry and telemedicine

• Remote diagnosis and patient management

• Biomedical devices for remote monitoring

• Intra-body communication

• Energy scavenging for wireless biomedical applications

• E-textile integrated biosensors and circuits

• Energy management and optimization issues in biomedical devices and networks

• Wearable, outdoor and home-based applications

• Wearable medical devices and sensors

• Implantable and ingestible medical devices and sensors

• Decision support algorithms for data analysis

• Accuracy, reliability, security, protection, identity, privacy of diagnoses and data

• RF wireless technology in medical devices and safety

• Microwave interaction with biological tissues

• All-pervasive wireless systems for health applications

• Factoring in the environment (hospitals, nursing homes, assisted living…)

Area 4: Underwater wireless networks

(Recent CFP: http://wuwnet.acm.org/2016/cfp.php)

• Underwater network and system architectures

• Efficient underwater communications (including acoustic, optical, RF, and wired, etc.), with techniques from the physical layer to the application layer

• Underwater acoustic modeling and signal processing

• Cooperative underwater communications, including, PHY, MAC, routing, and data transfer, etc.

• Networked underwater robotics and systems, such as localization, navigation, security, communication & coordination, or human operator interaction.

• Coordinated energy harvesting systems and power systems for underwater networks and systems

• Energy-efficient algorithms, and protocol design for underwater networks, as well as signal/image processing and communication systems

• Operating system and middleware support for underwater networks and systems

• Applications that broadly address underwater networks and systems, including coordinated underwater vehicles

• Modeling, simulation, and testbeds for underwater systems and platforms

• Experimental results from underwater networking, signal/image processing and communications field trials

• Application requirements for underwater networks, signal/image processing and communication systems presented by end users

Area 5: Cyber-Physical Systems

(Recent CFP: http://www.wikicfp.com/cfp/servlet/event.showcfp?eventid=52591&copyownerid=58972)

Control Systems

* embedded/networked/intelligent
* wireless sensing/actuation
* adaptive/predictive

Scalability/Complexity

* modularity
* design methodology
* legacy systems
* tools

Interoperability

* concurrency
* models of computation
* networking
* heterogeneity

Validation and Verification

* assurance
* certification
* simulation

Cyber-security

* intrusion detection
* resilience
* privacy
* attack vectors

Applications of CPS

* robotics
* transportation
* military
* medical
* consumer
* manufacturing
* power systems

Area 6: Application of WSNs in smart grids/smart home/smart buildings

Area 7: Real-system development based on TelosB motes, such as (intelligent) temperature monitoring networks, which includes implementation of existing or proposed protocols