

Tracks - Themes - Topics

B.1 Representing and understanding biomedical knowledge

B.1.1 Representations/Ontologies/ Terminologies

- 1 *Controlled terminology and vocabularies*
- 2 *Ontologies, knowledge representations, data models*

B.1.2 Knowledge integration and visualization

- 3 *Information integration from multiple sources; knowledge management*
- 4 *Information and knowledge visualization*
- 5 *Simulation of complex systems*

B.1.3 Language and speech processing

- 6 *Natural language processing, understanding and generation*
- 7 *Speech recognition and generation*
- 8 *Text mining*

B.1.4 Image and signal processing

- 9 *Image processing, modeling and interpretation*
- 10 *Physiological signal modeling and processing*

B.2 Enhancing care, patient safety and outcome

B.2.1 Diagnosis/ Treatment/ Prognosis

- 11 *Physiological and disease process modeling*
- 12 *Intelligent data analysis, data mining, and automated learning*
- 13 *Planning and decision analysis*
- 14 *Predictive Modeling*

B.2.2 Decision support and guidelines

- 15 *Clinical guidelines and protocols*
- 16 *Computer-based decision support*
- 17 *Disease management/disease stratification*

B.2.3 Reducing errors through system & cognitive measures

- 18 *Cognitive models and problem solving*
- 19 *Patient safety and medical errors*
- 20 *Natural user interfaces*
- 21 *Computer-assisted medical education and intelligent tutoring systems*

B.2.4 Personalized and preventive care

- 22 *Patient-centered care*
- 23 *Personal health systems/personal health records*
- 24 *Personalized medicine*
- 25 *Mobile health*

B.2.5 Emerging technologies

- 26 *Virtual reality and active vision methods and applications*
- 27 *Web 3.0 and Network-based applications*
- 28 *Robots and agents*
- 29 *Pervasive and ubiquitous computing*

B.3 Managing care information and workflow

B.3.1 HIS/CIS design and architecture

- 30 *Collaborative design and development*
- 31 *Knowledge management and workflow design*
- 32 *System implementation and change management*
- 33 *Health information exchange*

B.3.2 Specialized HIS/CIS

- 34 *Clinical specialty systems, e.g., ambulatory care, emergency, critical care, etc.*

35 *Functional health information systems, e.g., Electronic health records, electronic medical records, computerized provider order entry systems, lab systems, etc."*

36 *Health information portals and digital libraries*

37 *Open source systems*

B.3.3 Information quality, privacy, and security

38 *Privacy, confidentiality, security and information protection*

39 *Data standards and enterprise data sharing*

40 *Data warehousing, database design and construction*

41 *Database access and information retrieval*

B.3.4 Large scale health information systems & infrastructures

42 *National and international health IT efforts and implementations*

43 *Disaster and epidemic planning*

44 *Biosurveillance and population health monitoring*

45 *Telehealth and telemedicine*

B.4 Enabling cost-effective health care

B.4.1 Empirical research and evaluation

46 *Technology and system evaluation*

47 *Economic and cost-effectiveness analysis*

48 *Socio-organizational impact, quality assessment and improvement*

49 *Organizational culture, barriers to clinical system implementation*

B.4.2 Human factors and adaptive measures

50 *Human factors and usability*

51 *Human-computer interaction*

B.4.3 Informatics education and training

52 *Biomedical Informatics Education*

53 *Professional education and training*

B.4.4 Informatics policies and ethical issues

54 *Government, community, and organizational policies for health and informatics*

55 *Ethical and legal issues*