



## What is Biomedical and Health Informatics?

### Introduction

Biomedical and health informatics applies principles of computer and information science to the advancement of life sciences research, health professions education, public health, and patient care. This multidisciplinary and integrative field focuses on health information technologies (HIT), and involves the computer, cognitive, and social sciences.

Informatics is the science of how to use data, information and knowledge to improve human health and the delivery of health care services. Health IT is part of informatics and an essential aspect of AMIA, but technology and technological considerations are only one component of the association's work. Health IT enables advancements in health care by providing the tools with which to set knowledge in motion. Biomedical and health informatics has developed its own areas of emphasis and approaches that sets it apart from other professions and disciplines. Biomedical informatics (BMI) is the interdisciplinary, scientific field that studies and pursues the effective uses of biomedical data, information, and knowledge for scientific inquiry, problem solving and decision making, motivated by efforts to improve human health.

- BMI develops, studies and applies theories, methods and processes for the generation, storage, retrieval, use, and sharing of biomedical data, information, and knowledge.
- BMI builds on computing, communication and information sciences and technologies and their application in biomedicine.
- BMI investigates and supports reasoning, modeling, simulation, experimentation and translation across the spectrum from molecules to populations, dealing with a variety of biological systems, bridging basic and clinical research and practice, and the healthcare enterprise.
- BMI, recognizing that people are the ultimate users of biomedical information, draws upon the social and behavioral sciences to inform the design and evaluation of technical solutions and the evolution of complex economic, ethical, social, educational, and organizational systems.

The growing role of HIT has created the need to broaden and deepen the pool of workers who are able to help organizations deal effectively with their investment in information technology and, thus, enhance the prospects for major improvements in the safety, quality, effectiveness and efficiency of care. Biomedical and health informaticians understand the workflow of organizations as well as the potential and limitations of information technology. Informaticians conduct research and apply findings to improve processes and propose solutions to technical, clinical, and organizational challenges hampering successful technology implementations.

### About AMIA

**AMIA** is the center of action for more than 4,000 health care professionals, informatics researchers and thought leaders in biomedicine, health care and science. AMIA is an unbiased, authoritative source within the informatics community and the health care industry. AMIA and its members are transforming health care through trusted science, education and practice in biomedical and health informatics.

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