What is “Biomedical Informatics”?
Biomedical informatics (BMI) is the interdisciplinary 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.
Biomedical Informatics: Corollaries to the Definition

1. BMI develops, studies and applies theories, methods and processes for the generation, storage, retrieval, use, and sharing of biomedical data, information, and knowledge.

2. BMI builds on computing, communication and information sciences and technologies and their application in biomedicine.
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<td><strong>3.</strong> BMI investigates and supports reasoning, modeling, simulation, experimentation and translation across the <strong>spectrum from molecules to populations</strong>, dealing with a variety of biological systems, bridging basic and clinical research and practice, and the healthcare enterprise.</td>
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<td><strong>4.</strong> BMI, recognizing that people are the ultimate users of biomedical information, draws upon the <strong>social and behavioral sciences</strong> to inform the design and evaluation of technical solutions and the evolution of complex economic, ethical, social, educational, and organizational systems.</td>
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Biomedical Informatics in Perspective

Basic Research

Biomedical Informatics Methods, Techniques, and Theories

Bioinformatics

Imaging Informatics

Clinical Informatics

Public Health Informatics

Biomedical Informatics ≠ Bioinformatics

Applied Research And Practice
Interdisciplinary Nature of Biomedical Informatics

- Computer Science (hardware)
- Computer Science (software)
- Cognitive Science & Decision Making
- Management Sciences
- Clinical Sciences
- Basic Biomedical Sciences
- Bioengineering
- Epidemiology And Statistics
Biomedical Informatics Textbook
(3rd edition)
Springer Verlag - 2006
Biomedical Informatics in Perspective

Basic Research

Biomedical Informatics Methods, Techniques, and Theories

Bioinformatics

Imaging Informatics

Biomedical Informatics ≠ Health Informatics

Health Informatics

Clinical Informatics

Public Health Informatics

Applied Research And Practice

Molecular and Cellular Processes

Tissues and Organs

Individuals (Patients)

Populations And Society

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Biomedical Informatics in Perspective

Contribute to...

Biomedical Informatics Methods, Techniques, and Theories

Draw upon....

Other Component Sciences

Contributes to....

Clinical or Biomedical Domain of Interest

Draws upon....

Applied Informatics

Contribute to...

Computer Science

Contribute to...

Decision Science

Cognitive Science

Information Sciences

Management Sciences

Other Component Sciences

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Education of Biomedical Informatics Researchers

Basic Research

Education and Experience at Both Levels

Applied Research

Biomedical Informatics Methods, Techniques, and Theories

Contributions Expected

Bioinformatics

Imaging Informatics

Clinical Informatics

Public Health Informatics

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BMI and HIT

Biomedical Informatics Training, Research and Development
- Academia
- Research Institutes
- Corporate Research Labs

Clinical Systems Companies
- Hospitals, Health Systems, Practices,
- Healthcare Industry

Academic Medical Centers

HIT

Biomedical Research Community
BMI and HIT

Biomedical Informatics Training, Research and Development
- Academia
- Research Institutes
- Corporate Research Labs

Clinical Systems Companies

Hospitals, Health Systems, Practices, Healthcare Industry

Academic Medical Centers

Synergies

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