



RESEARCH ISSUES IN HEALTH CARE INFORMATICS

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Plan of Talk



- Interagency/International collaborations
- SEIII
- THE ISSUE

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DATA REQUIREMENTS

- Find it
 - _ Search facilities within and across data sets
- Access it
 - _ Mediation of disparate media and file formats
- Interpret it
 - _ Metadata at time of creation
 - _ Reinterpretation metadata; provenance
- Manipulate it
 - _ Generic and domain-specific tools
- Store it



SCIENCE AND ENGINEERING INFORMATION INTEGRATION AND INFORMATICS (NSF 04-528)

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Science and Engineering Informatics (SEI)

- _ Focuses on developing information technology to solve a particular science or engineering problem and generalizing the solution to other related problems

- _ TWO COMPONENTS
 1. A significant domain challenge;
 2. A significant computer science problem that is a barrier to achieving the domain challenge

Information Integration (II)

Provide a uniform view to a multitude of heterogeneous, independently developed data sources:

- _ Reconciling heterogeneous formats, even with enforced standards;
- _ Semantics and syntax;
- _ Decentralized data-sharing;
- _ On-the-fly integration;

• THE INTEGRATION VISION

Access to the human and health records

Tailored to type of user :K-12, university students, scientists/engineers, physicians, policy makers, individual members of the public

Personalized to individual users

Interfaces that learn user preferences

Adapt to specialized vocabularies

Create linkages across specialized vocabularies

Appropriate analysis and aggregation tools

THE DATA VISION

Integrated analysis environment with access to:

- _Instruments (sensors)
- _Data
- _Analysis tools
 - Search Capabilities
 - Extract Information
 - Merge across data sets
 - Automatically annotate data
 - Connect Results to data and processes that generated
- _Colleagues / collaborators
- _Literature

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The background features a large, faded watermark of the National Science Foundation logo. The logo is circular with a gear-like border and contains the text "NATIONAL SCIENCE FOUNDATION" around the perimeter and "NSF" in the center over a globe.

WHAT IS MISSING?

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THE PEOPLE

HUMAN-COMPUTER
INTERACTIONS
TRAINING
ACCEPTANCE
SOCIOLOGY/NETWORKS

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