

The 4th decade of Cancer Informatics

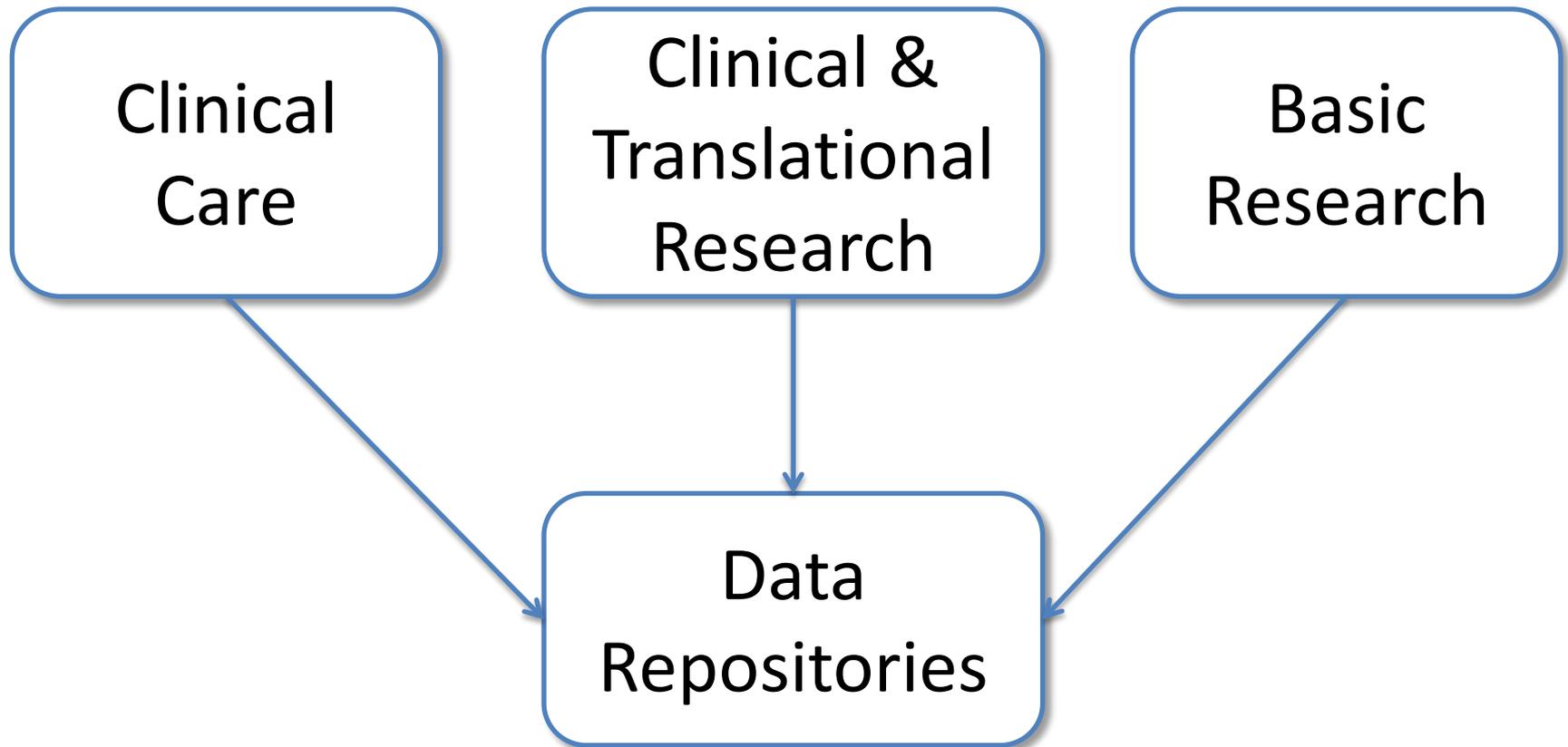
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Primary Work



Secondary Use

Vendors

Meaningful Use
Market Share
Accountable Care

Regulatory &
Reporting
Requirements

Data Security &
Liquidity

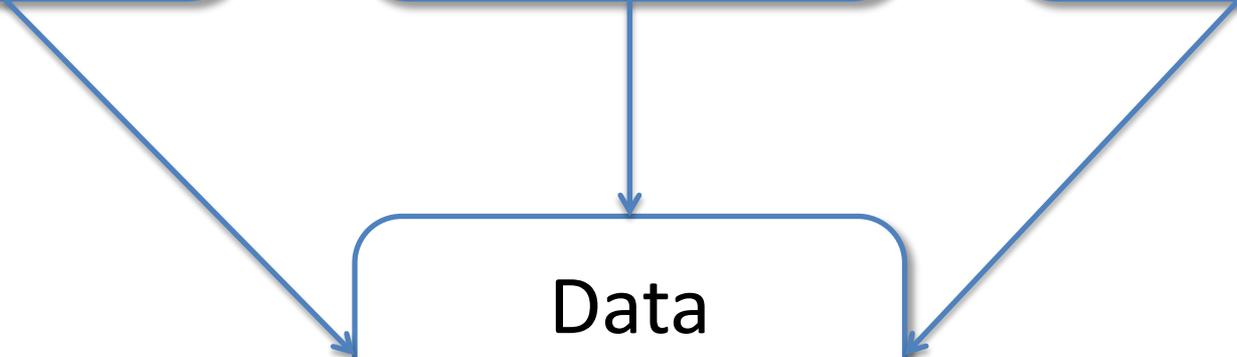
Clinical
Care

Clinical &
Translational
Research

Basic
Research

Data
Repositories

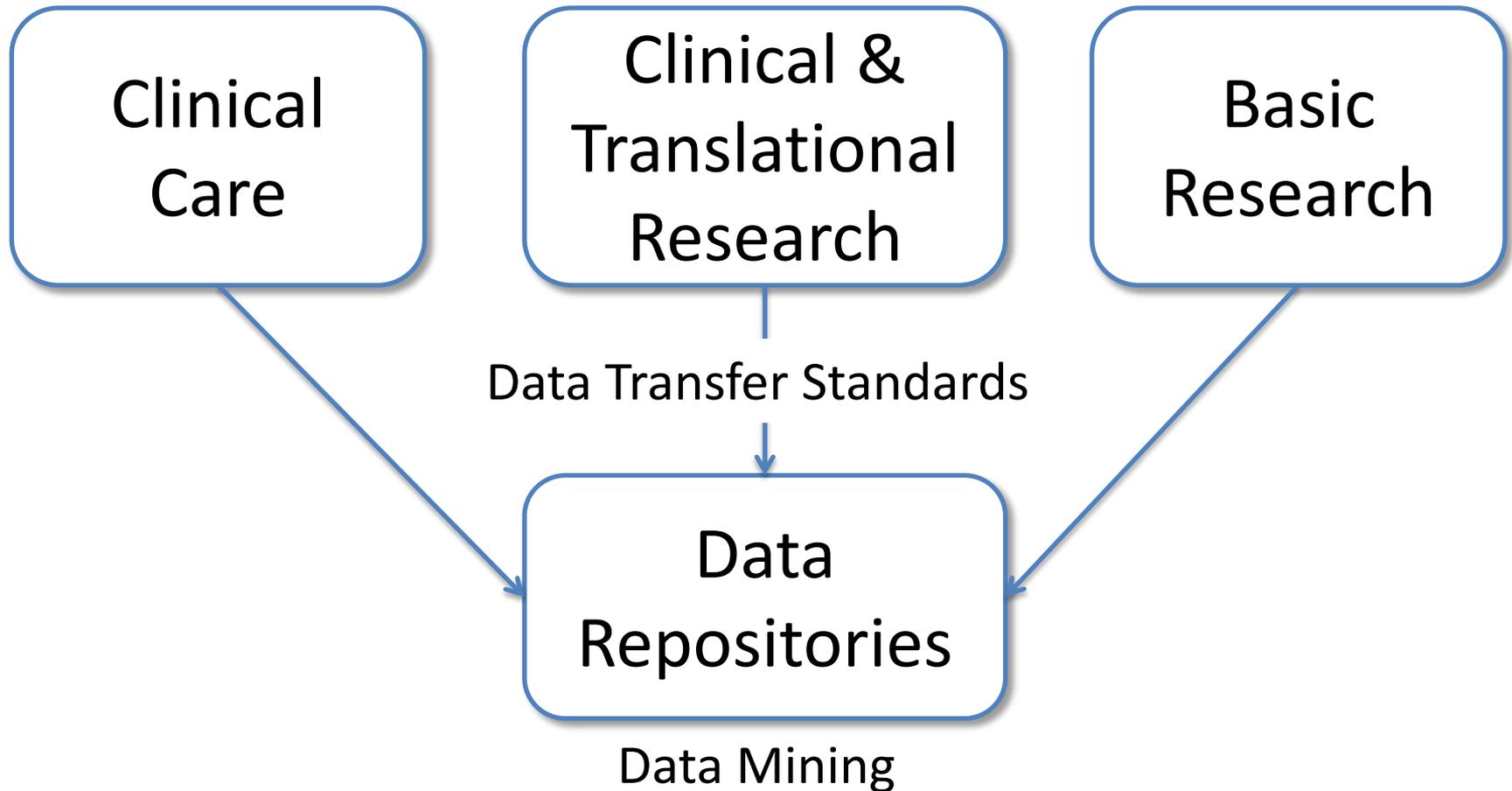
Enterprise Analytics



Gaps

Clinical Decision Support

Novel Biomarkers



Tension between Informatics as:

Research Program

- Primary research aim
- Funding: Grants with Informatics PI
- Contributes to Science of Informatics and Biomedicine
- Training and career development
- NOT industrial grade algorithms and tools

Infrastructure/Service

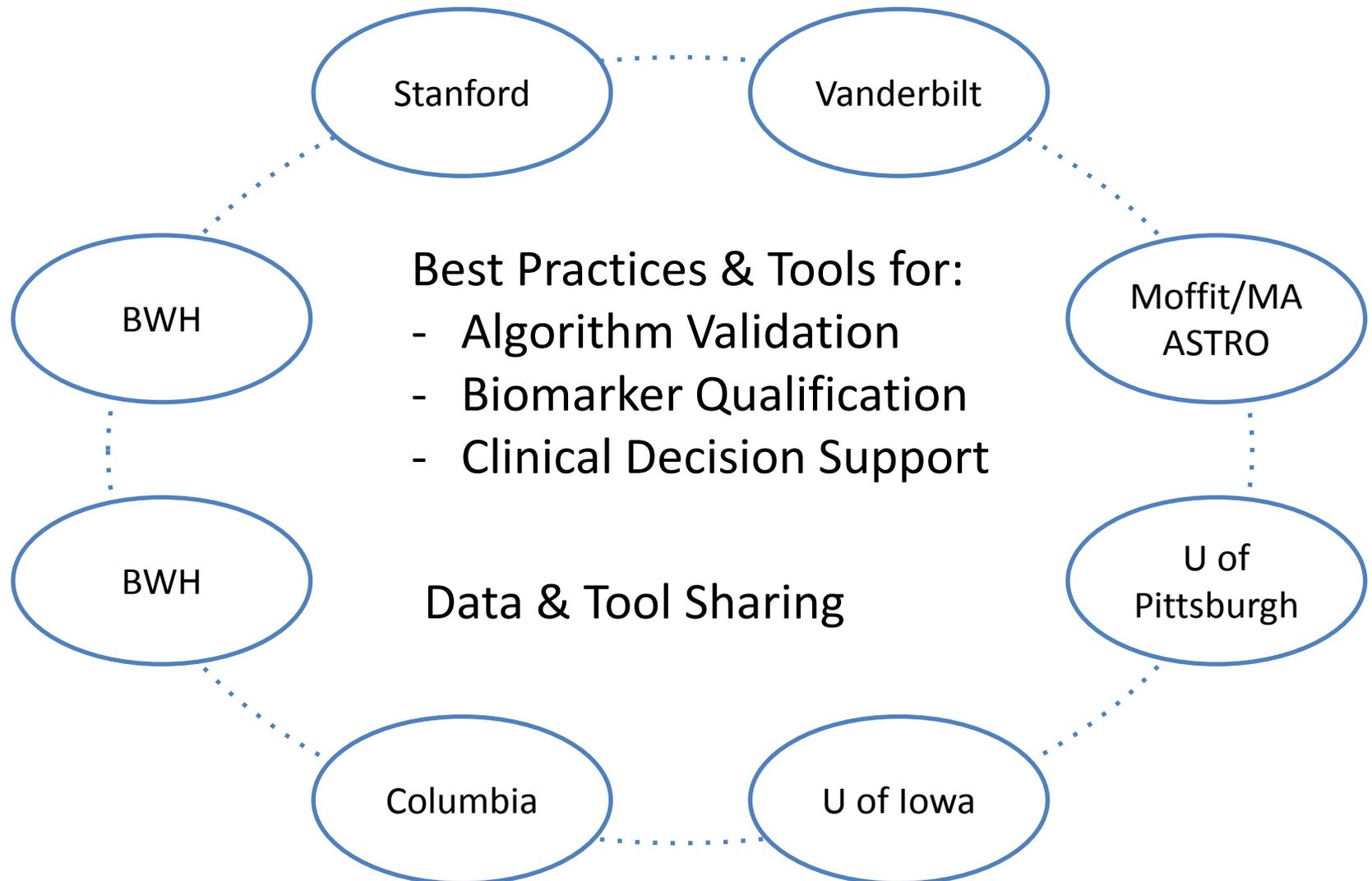
- Supportive role
- Everyone needs, no one wants to pay for
- Funding: Institutional, Contracts, Coordinating Centers, Service Cores, Co-investigators
- Industrial grade software with ongoing maintenance

Quantitative Imaging Network U01

Quantitative Imaging Network U01



Quantitative Imaging Network U01



QIN System Architecture

Data Visualization
Clinical Decision Support

Clinical Systems

Image Feature Extraction Algorithms
Statistical Methods

Research Methods

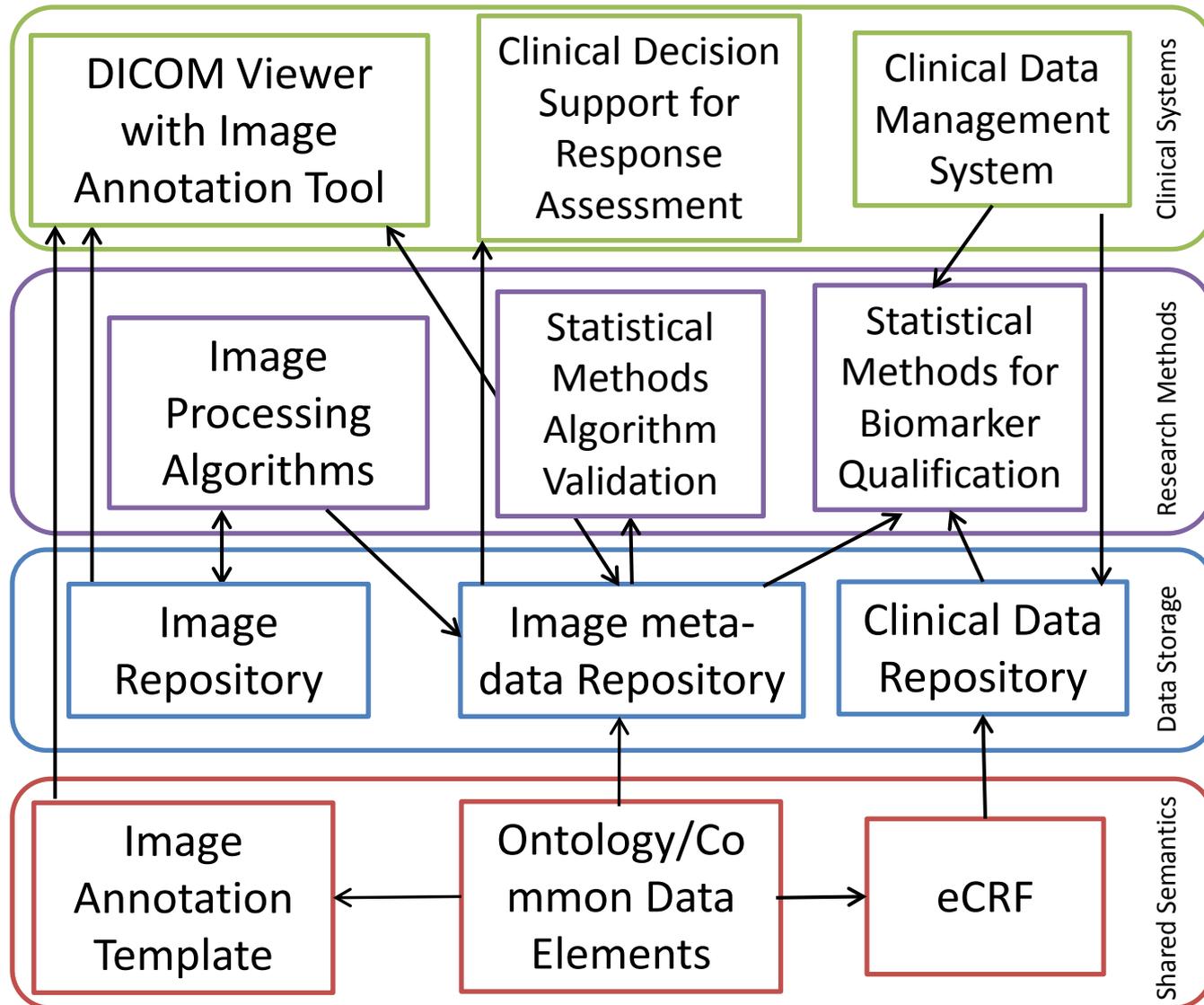
Linked Data Repository

Data Storage

Data Semantics and Standards

Shared Semantics

QIN System Architecture



Summary

- Role for Informatics Infrastructure & Research
- Infrastructure support
 - Primary Research Workflow
 - Data Repositories - linked clinical, genomic, imaging, pathology
- Informatics research
 - Clinical Decision Support
 - Data mining