A Human-Centered Computing Agenda for Health IT

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Policy Makers

Payers

caregivers

patients

hospital administrators

users

AI

Semantic Modeling

Natural Language

Data Mining

Sensing

Image Analysis

Robotics

Safety Critical Systems

employers

providers
Workflow modeling and support, usability, cognitive support, computer-supported cooperative work (CSCW), etc.

Mismatch between Computational Technique & Scale of Problem

Connectivity

Automation

Decision Support

Data Mining
How would you create a tool that would…. 

Detect indicators for autism from video records.
Create models of surprise for physicians
Support collaboration across a distributed care team
Provide personalized health coaches

Personalized medicine
How would you create a tool that would….

- Optimize resources across the system
- Align incentives to pay-for-outcome vs. pay-for-fee
- Understand health disparity and utilization data
- Predict overall economic losses due to poor healthcare

*Drive before buying*
Why now?

Major national investment in basic Health IT, e.g. EMRs and HIEs

New avenues for funding

US at or near bottom for managing chronic and population health care needs despite massive spending

Exponential growth in chronic diseases, esp associated with nutrition

Save $80B / yr through improving care of 7 most common chronic diseases