Professional Education for the Future of Health Informatics

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Today’s Menu

➢ What informatics is and isn’t
➢ Informatics Training: Programs that are and aren’t...
➢ The twelve workforce roles and the ONC-HITECH program
➢ A bit about the new UM Program
What Informatics Is: Three Visions*

I. Cross-training between a set of basic sciences and a domain
II. Pursuit of a “Fundamental Theorem”
III. “Tower of Achievement”

*Friedman CP. What informatics is and isn’t. JAMIA. In press.
Informatics Vision I: Informatics as Cross-training

- Basic Informational Sciences
  - Information Science
  - Computer Science
  - Cognitive Science
  - Organizational Science
  - Others...

- An Application Domain
  - Health
  - Clinical profession (pathology)
  - Biology
  - Public Health
  - Others...
So an “Informatician” is Different…

What a Scientist Knows

Basic Informational Sciences

What an Informatician Knows

“<Domain> Informatics”

An Application Domain

What a Clinician or Public Health Practitioner Knows
Informatics Vision II: “The Fundamental Theorem of Biomedical Informatics”*

The “practice” of informatics is the pursuit of information and knowledge resources that seek to make people “better” than they would be if unassisted, and also to explore if they have been successful in that pursuit.

Informatics is about people, groups, organizations, cultures—as much as it is about technology.

Informatics Vision III: The Tower of Achievement*

Informatics training touches each level of the tower and the science at each level.

Informatics Isn’t…

- Scientists or clinicians tinkering with computers
- Management of large datasets per se
- Deploying and configuring EHRs in pursuit of Meaningful Use, or supporting deployment
- The profession of health information management
- Anything done using a computer
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Programs that are and aren’t…

Not Informatics

HIT Workforce Programs
• Certificates & associate degrees
• Most (not all) ONC-HITECH programs
• Clerks and coders who use computers

HIM Programs
• Bachelors and masters degrees
• Practice within the bounds of an established profession

Informatics

Research Programs
• Doctoral degrees
• Teaching and research consistent with the Fundamental Theorem and the “Tower”

Professional Programs
• Masters degrees & clinical fellowships
• Fill advanced informatics practice and leadership positions consistent with Fundamental Theorem and the “Tower”
Issues on the Horizon

➢ Professional certification

*Informatics as a profession*
  - Physician sub-specialty under ABPM
  - Pathology

➢ Program accreditation

*Informatics as a discipline*
  - RRC accreditation of physician fellowships
  - Health informatics accreditation (CAHIIM)
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Workforce Training and the Program to Get to Meaningful Use

- Regional extension centers
- Workforce training
- Adoption of EHRs
- Medicare & Medicaid Incentives and penalties
- State grants for health Information exchange
- Standards, interoperability & certification framework
- Privacy & Security framework

We are here.

- Increased transparency and efficiency
- Improved individual and population health outcomes
- Improved ability to study and improve care delivery

Building the ONC Program

1. Identified 12 key roles (not jobs) looking to the future and aligned with the HITECH program
   • 6 roles compatible with community college education
   • 6 roles compatible with university based training

2. Validated the roles at a multi-stakeholder workshop

3. Designed and funded four grant/cooperative agreement programs ($118 Million)
   • 3 programs supporting the community college roles
   • 1 program supporting the university roles
Six Roles Targeted by the Community College Program (NOT Informatics)

1. Practice workflow & information management redesign specialists
2. Clinician/practitioner consultant
3. Implementation support specialist
4. Implementation managers
5. Technical/software support staff
6. Trainers
Three Enmeshed Grant Programs

Curriculum Development Centers (5 awards):
- 20 components designed for dissemination

Competency Exam (1 award):
- Development and Implement exam program

Community College Consortia (5 awards):
- Implement program at 82 member colleges
- 150 trainees/yr/college
University-Based Training: Targeted Roles (Possibly Informatics)

1. Clinician/Public Health Leader
2. Health Information Management & Exchange Specialist
3. Health Information Privacy & Security Specialist
4. Research and Development Scientist
5. Programmers & Software Engineer
6. Health IT Sub-specialist
University Based Training Program

- Nine awarded grants support 15 institutions
  - Four of the grants support consortia
- Will support ~ 1700 trainees over three years
- Trainees appointed for at least 1 and up to 2 years
- One year of training leads to institutional certificate or masters degree
- Two years of training leads to masters degree with thesis
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A Unique Professional Program

- An “MBA” for students pursuing informatics careers
- Two years of full-time, intensive study
- Access to world class faculty, facilities and infrastructure
- Superb student colleagues

Health Informatics
A joint program of the School of Information and the School of Public Health
The program’s culture derives from the two sponsoring schools

**School of Information**
- Focus on “the system after next”
- Social computing
- Consumer-facing health technology

**School of Public Health**
- Developer of leaders
- Population health interventions that scale
- Health promotion and disease
Program offerings

- **Master of Health Informatics**
  - First class of 20 students: fall 2012
  - Two year residential program
  - 52 credits

- **Certificate in Health Informatics**
  - Began Fall 2011: 38 students declared
  - 18 credits
  - Open to all graduate students on Ann Arbor campus
Program components matched to its goals

- Interdisciplinary courses that integrate information and health
- Courses drawn from the two sponsoring schools
- Leadership seminar
- Internship placements at the edge; opportunity for extended internship
- Broad array of electives
Courses

MHI Core: 40-41 credits

Cluster 1: Interdisciplinary (16 credits)
Cluster 2: Health system and organizational studies (6 credits)
Cluster 3: Human and social behavior (3 credits)
Cluster 4: Methods (9-10 credits)
Cluster 5: Technology (6 credits)

Electives: 11 or more credits
MHI Electives: 11-12 credits

Two example “elective clusters” to pursue specific career goals:

To create consumer facing web-based resources:
- EHS 635 / HBEHED 635 Tailored Health Communication
- HBEHED 661 Designing Sticky Communications for Health Advocacy, Education, and Mass Media
- SI 551 Information-Seeking Behavior
- SI 682 Interface and Interaction Design

To develop data analytic tools that could be used by hospitals, clinical and translational researchers or insurance companies:
- BIOSTAT 619 Clinical Trials
- SI 508 Networks: Theory and Application
- SI 649 Information Visualization
- EECS 598 Biomedical Machine Learning
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Thanks and Write to Me

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