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Eight Years of Distance Teaching and Learning in Biomedical Informatics at OHSU

William Hersh, MD
Professor and Chair
Department of Medical Informatics & Clinical Epidemiology
Oregon Health & Science University
Portland, OR, USA
Email: hersh@ohsu.edu
Web: www.billhersh.info

Overview of talk

- Motivations for health information technology (HIT) and education in biomedical informatics
- Overview of OHSU biomedical informatics graduate program
- Description of teaching and learning technologies used by program

The picture is bright for HIT in the 21st century

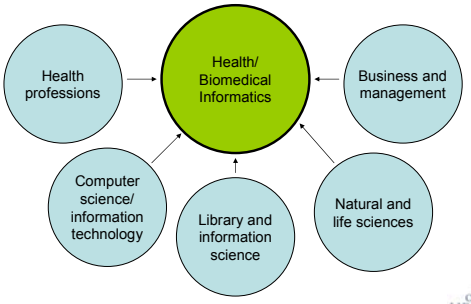
- Recognition of its value, especially the electronic health record (EHR) with clinical decision support (CDS) (Hersh, JAMA, 2002; Bates, 2005)
- Growing recognition of importance of "secondary use" of clinical data for (Safran, 2007)
  - Health information exchange (HIE)
  - Quality reporting and improvement
  - Clinical and translational research (NIH CTSA initiative – Zerhouni, 2007)
  - Public health surveillance and reporting
  - Personal health records

But there are barriers and challenges (Hersh, 2004)


Health Care Information Technology
Progress and Barriers

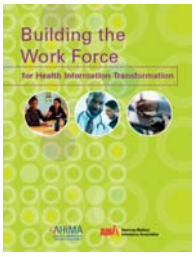
- Cost
- Technical challenges
- Interoperability
- Privacy and confidentiality
- Workforce → **addressed by our educational programs**

What is informatics competence? It draws on many disciplines



Workforce development advocacy being led by AMIA and AHIMA

- Workforce summit (2006)
- AMIA – grant from Robert Wood Johnson Foundation to develop framework for certification in informatics
  - A challenge is that field is interdisciplinary and not "cookie-cutter" like some professions
- AHIMA – recent approval of *Vision 2016: A Blueprint for Quality Education* (2007)
  - Acknowledges substantial change in HIM field
  - Advocates increasing entry level for RHIA certification to master's level



Categories of biomedical informatics practice (Hersh, 2006)

Category	Jobs
Academic	Informatics researcher or teacher
Professional	CIO, Chief Medical/Nursing Information Officer, Developer, Trainer, Health information manager
Liaison	Represent clinical or research community in IT initiatives

- Adapted from Covvey et al., *Pointing the Way*, 2001
- For some individuals, roles may overlap

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Informatics educational programs at OHSU

Category	Programs
Academic	- PhD - Postdoc ± master's degree
Professional	- Postdoc ± master's degree - Master's degree - Graduate Certificate
Liaison	- 10x10

For more details – http://www.ohsu.edu/dmice/education

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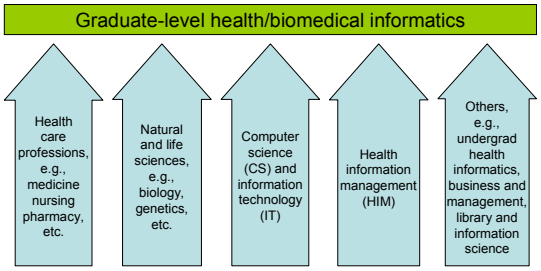
There are many pathways into biomedical informatics



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Informatics curriculum at OHSU – general principles

- Aims to cover the "full spectrum" of biomedical informatics (Hersh, 2005; Hersh, 2007)
- Curriculum centered around "knowledge base"
  - Core knowledge at master's level
  - PhD adds advanced courses and research
  - "Building block" approach allows progression to higher levels
- Have two established "tracks" and another in development
  - Medical informatics – clinically oriented
  - Bioinformatics – focused on genomics and bioscience
  - Health information management – advancing field historically focused on medical records
  - A possible future track? – public health informatics

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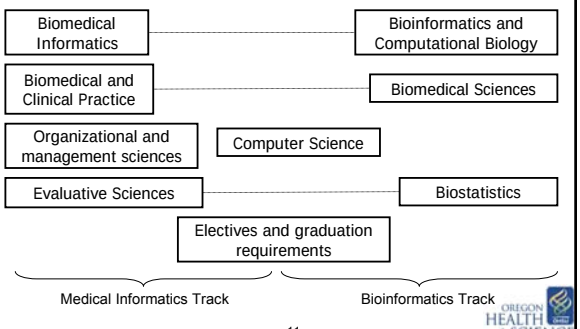
"Knowledge base" and its "domains"



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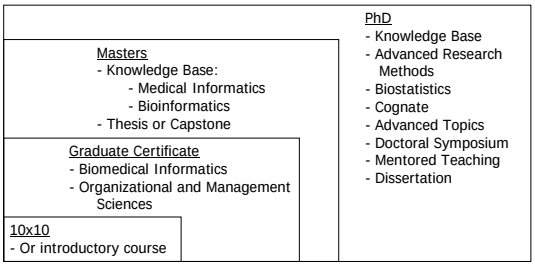
Building block approach to curriculum



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Educating the liaisons – 10x10

- Partnership with American Medical Informatics Association (AMIA) to meet Charles Safran's (2005) stated need to education one physicians and one nurse from each US hospital in informatics
  - Or, put another way, aim to educate 10,000 health care providers by 2010
- Course consists of introductory on-line course and adding one-day face-to-face session
  - Initial offering well-received (Hersh, IJMI, 2007)
  - Nearly 400 graduates so far (almost 4% of the way there!)
  - Other partners are also offering courses

AMIA 10x10™ 10,000Trained by 2010

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Educating beyond our site – distance learning

- (Hersh, JAMIA, 2001)
- Initially in Graduate Certificate, now master's
- Teaching modalities include
  - Voice-over-Powerpoint lectures
  - Threaded discussions
  - Readings, virtual projects, etc.
- All courses delivered via Blackboard, which we license at departmental level
  - Undertaking pilot evaluation with Sakai

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A major teaching modality is on-line lectures

- Developed using Articulate tool, which
  - Allows narration on individual slide basis
  - Outputs content in Flash
  - Allows learner to navigate slide by slide
- Also made available to learner
  - PDF of Powerpoint slides
  - MP3 file of sound from lecture

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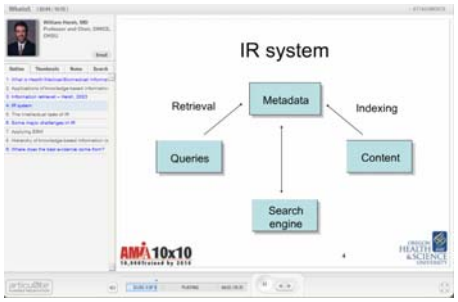
Example Articulate screen



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Some reflections after eight years

- Courses are not correspondence courses; interaction is a core component
  - Amount of interaction in discussion boards far exceeds any that could ever occur in a classroom
- "Distance" courses popular among people who live in Portland and even on-campus students
  - We (and registrar) no longer distinguish between in-person and on-line offerings of courses
  - Many "on-campus" courses also make use of "distance" tools
- Have created a virtual community
  - Meet at AMIA, HIMSS, OHSU, etc.

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New models for education can be developed with this technology

- Translation of 10x10 course into Spanish for Latin American audience (Otero, 2007)
- Offered in partnership with *Hospital Italiano* of Buenos Aires, Argentina
- Over 150 participants from 10 countries have completed course so far

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Current and future directions

- Growth of OHSU educational program
  - First couple PhDs have finished, more in pipeline
  - 160 alumni have been awarded 168 degrees
  - Over 500 enrolled in Graduate Certificate Program
  - NLM training grant recently renewed through 2012
- Expansion of 10x10 and related programs – ~380 have completed and new partnerships have been formed, e.g., American College of Physicians and Mayo Clinic
- Graduates have successfully found employment and rewards at a variety of levels
- Distance learning has enabled access to a much wider audience

For more information

- Bill Hersh
  - http://www.billhersh.info
- OHSU Department of Medical Informatics & Clinical Epidemiology
  - http://www.ohsu.edu/dmice
- OHSU educational programs
  - http://www.ohsu.edu/dmice/education
- American Medical Informatics Association
  - http://www.amia.org
- AMIA-OHSU 10x10
  - http://www.amia.org/10x10/partners/ohsu/
- American Health Information Management Association
  - http://www.ahima.org